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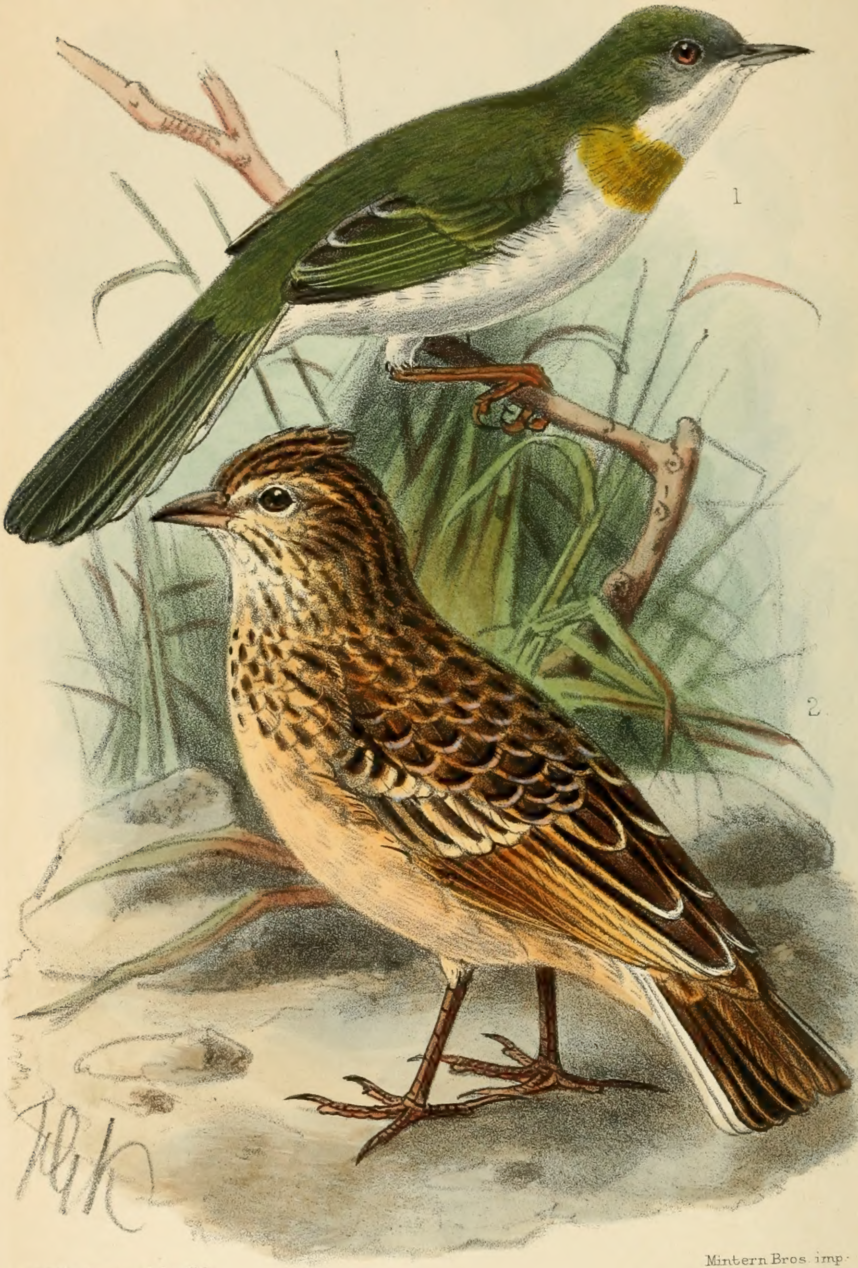

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THE IBIS,

A

QUARTERLY JOURNAL OF ORNITHOLOGY.

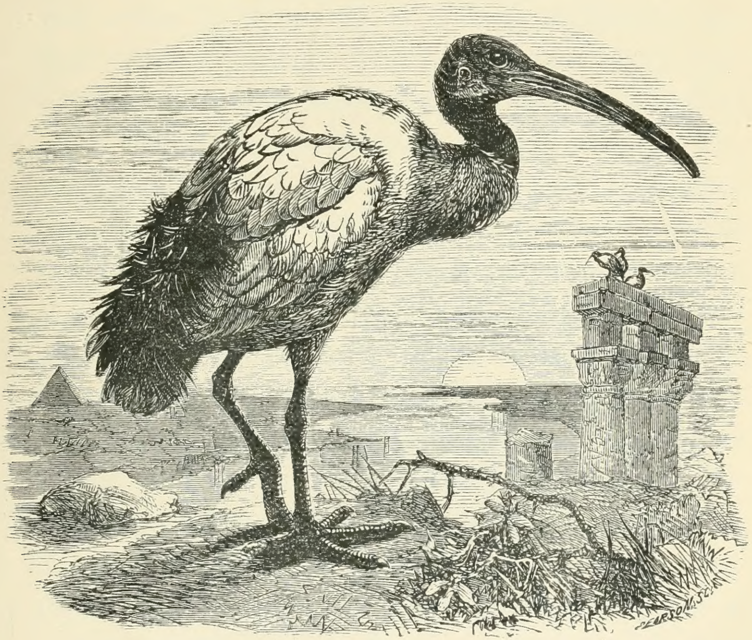
EDITED BY

PHILIP LUTLEY SCLATER, M.A., Ph.D., F.R.S.,

SECRETARY TO THE ZOOLOGICAL SOCIETY OF LONDON,

AND

HOWARD SAUNDERS, F.L.S., F.Z.S.



VOL. V. 1899.

SEVENTH SERIES.

Non moriar, sed vivam, et narrabo opera Domini.

LONDON:
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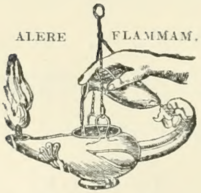
(Successors to J. VAN VOORST.)
1899.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PREFACE.

With the conclusion of the fifth volume of the Seventh Series of 'The Ibis' the Editors realize that another twelvemonth will see the end of their work in their present capacity. It is not probable that either of them will be able to undertake the Editorship of another Series, and they hope that younger and more active persons may be found to guide this Journal through its Eighth Series. The Committee of the B.O.U. will be glad to receive communications upon this subject. In the meanwhile the Editors may say that prosperity is evident in every branch of the work of the Union. There is certainly no lack of excellent contributors in every branch of Ornithology, and there are no symptoms of cessation in the discovery of novelties in bird-life required to furnish subjects for the pencil of the artist. The revenue of the Union is also quite sufficient to maintain the existence of the Journal in its present form; and it may reasonably be expected that a competent Editor will not be wanting when the fast approaching time arrives for a new appointment.

P. L. S.
H. S.

3 Hanover Square,
October 1st, 1899.

BRITISH ORNITHOLOGISTS' UNION.

1899.

[An asterisk indicates an Original Member. It is particularly requested that Members will give notice to the Secretary of the Union, 3 Hanover Square, London, W., of any error in their addresses or descriptions in this List, in order that it may be corrected.]

Date of Election.

1896. Alexander, Boyd, F.Z.S.; Swifts Place, Cranbrook, Kent.
1888. Aplin, Oliver Vernon; Bloxham, Banbury, Oxon.
1896. Archibald, Charles F.; 9 Cardigan Road, Headingley, Leeds.
1897. Astley, The Rev. Hubert Delaval, F.Z.S.; Chequers Court, Tring.
5 1885. Backhouse, James, F.Z.S.; Daleside, Harrogate.
1892. Baker, E. C. Stuart; District Superintendent of Police, Hafflong, North Cachar, Assam, India; care of Messrs. H. S. King & Co., 65 Cornhill, E.C.
1899. Balfour, Frederick Robert Stephen; Dawyck, Stobo, N.B., and Bachelors' Club, Piccadilly, W.
1889. Balston, Richard James, F.Z.S.; Springfield, Maidstone.
1890. Barclay, Francis Hubert; Herne Close, Cromer, Norfolk.
10 1872. Barclay, Colonel Hanbury, F.Z.S.; Tingrith Manor, Woburn, Bedfordshire.
1885. Barclay, Col. Hugh G.; Colney Hall, Norwich.
1889. Barrett-Hamilton, Gerald E. H., F.Z.S.; Kildare Street Club, Dublin; Kilmanock, Arthurstown, Ireland; and 68 Pall Mall, S.W.
1881. Barrington, Richard Manliffe, LL.B.; Fassaroe, Bray, Co. Wicklow.
1884. Beddard, Frank E., M.A., F.R.S., F.Z.S., Prosector to the Zoological Society of London; Zoological Society's Gardens, Regent's Park, N.W.
15 1897. Benson, John; The Post Office, Vancouver, B.C.
1897. Berry, William, B.A., LL.B.; Tayfield, Newport, Fifeshire.
1880. Bidwell, Edward; 1 Trig Lane, Upper Thames Street, E.C.
1884. Bingham, Lt.-Col. Charles T. (Indian Staff Corps), F.Z.S.; care of Messrs. H. S. King & Co., 65 Cornhill, E.C.

Date of Election.

1892. **Bird**, Rev. **Maurice C. H.**, M.A.; Brunstead Rectory, Stalham, S.O., Norfolk.

20 1891. **Blaauw**, F. E., C.M.Z.S.; Gooilust, 'sGraveland, Noord-Holland.

1898. **Bland, Ivers**; Newbold Firs, Leamington.

1873. **Blanford, William** T., LL.D., F.R.S., F.Z.S.; 72 Bedford Gardens, Kensington, W.

1897. **Bligh**, Hon. **Ivo Francis**; Southfields Grange, Wandsworth, S.W., and Union Club, Trafalgar Square, W.C.

1893. **Bolam, George**, F.Z.S.; The Mead, Beal, R.S.O., Northumberland.

25 1897. **Bonar**, Rev. **Horatius Ninian**; Free Church Manse, Salton, Pencaitland, East Lothian, N.B.

1894. **Bonhote, John Lewis**; Ditton Hall, Fen Ditton, Cambridgeshire.

1898. **Booth, George Albert**; Phœnix Iron Works, Derby Street, Preston, and Fern Hill, Grange-over-sands, Lancs.

1895. **Bradford**, Dr. J. **Rose**, F.R.S.; 60 Wimpole Street, W.

1885. **Brockholes, William Fitzherbert**; Claughton-on-Brock, Garstang, Lancashire.

30 1890. **Brooke, Harry Brinsley**; 33 Egerton Gardens, Kensington, W.

1899. **Brooke, John Arthur**, J.P.; Fenay Hall, Huddersfield, and Fearn Lodge, Ardgay, Ross-shire.

1868. **Buckley, Thomas Edward**, B.A., F.Z.S.; Rossal, Inverness, N.B.

1895. **Bulgaria**, H.R.H. **Ferdinand**, Prince of; Sophia, Bulgaria.

1872. **Buller**, Sir **Walter Lawry**, K.C.M.G., Sc.D., F.R.S., C.M.Z.S.; 122 Tinakori Road, Wellington, New Zealand.

35 1899. **Butler, Arthur Lennox**; State Museum, Kuala Lampor, Selangor, Malay States.

1884. **Butler**, Lieut.-Col. E. A.; Plumpton House, Bury St. Edmunds, Suffolk.

1896. **Butterfield**, W. C. J. **Ruskin**; 14 Stanhope Place, St. Leonards-on-Sea.

1884. **Buxton, Geoffrey Fowell**; Dunston Hall, Norwich.

1895. **Buxton**, S. **Gurney**, F.Z.S.; Catton Hall, Norwich.

40 1896. **Cade, Francis** J.; Teighmore, Cheltenham.

1889. **Cameron, Ewen Somerled**, F.Z.S.; Terry, Montana, U.S.A.

1896. **Cameron, James** S.; 1st Bn. Royal Sussex Regt.; and Low Wood, Bethersden, Ashford, Kent.

Date of Election.

1888. Cameron, John Duncan; Low Wood, Bethersden, Ashford, Kent.

1892. Campbell, Charles William, C.M.Z.S.; H.B.M. Chinese Consular Service; British Legation, Peking, China.

45 1888. Carter, James; Burton House, Masham, R.S.O., Yorkshire.

1899. Cartwright, Thomas Leslie Melville; Newbottle Manor, Banbury.

1890. Cave, Charles John Philip, F.Z.S.; Ditcham Park, Petersfield.

1888. Chamberlain, Walter, F.Z.S.; Bromesberrow Place, Ledbury.

1894. Chance, A. Macomb, Jun., B.A.; Lawnside, Edgbaston, Birmingham.

50 1884. Chapman, Abel, F.Z.S.; 9 South Bailey, Durham.

1882. Chase, Robert William; Southville, Priory Road, Edgbaston, Birmingham.

1897. Cholmley, Alfred John, F.Z.S.; Place Newton, Rillington, Yorkshire.

1889. Clarke, Stephenson Robert, F.Z.S.; Borde Hill, Cuckfield, Sussex.

1880. Clarke, William Eagle, F.L.S.; Museum of Science and Art, Edinburgh.

55 1898. Cocks, Alfred Heneage, F.Z.S.; Thames Bank, Great Marlow, Bucks.

1898. Coke, Hon. Richard; 1st Bn. Scots Guards.

1895. Coles, Richard Edward; Oakfield, Milton, Lymington.

1880. Cooper, Lieut.-Col. E. H., F.Z.S.; 42 Portman Square, W.

1888. Cordeaux, Captain William Wilfrid; (21st Lancers). Westgate Court, Canterbury.

60 1882. Cory, Charles B., F.Z.S.; Third National Bank, State Street, Boston, Mass., U.S.A.

1892. Courage, Harold Mitchell; Snowdenham, Bramley, Guildford.

1899. Cowie, Archibald; St. John's School, Leatherhead.

1896. Cowie, Major Alexander Hugh, R.E., F.Z.S.; care of H. Ward, Esq., Yeatton, Lymington, Hants, and St. Lucia, West Indies.

1896. Crawford, Francis C.; 19 Royal Terrace, Edinburgh.

65 1894. Crewe, Sir Vauncey Harpur, Bt.; Calke Abbey, Derbyshire.

1896. Crockett, Samuel Rutherford; Bank House, Penicuik, Midlothian.

Date of Election.

1895. Crossley, Sir Savile B., Bt., F.Z.S.; Somerleyton, Lowestoft, and 12 Carlton-House Terrace, S.W.

1898. Crossman, Alan F.; St. Cuthbert's, Berkhamsted, Herts.

1882. Crowley, Philip, F.Z.S.; Waddon House, Waddon, Croydon.

70 1898. Crowley, Reginald Alwyn; Highfield, Alton, Hants, and 22 High Street, Croydon.

1899. Curtis, Frederick; Chalfont House, 20 Queen Square, W.C.

1877. Dalgleish, John J.; Brankston Grange, Bogside Station, Stirling, N.B.

1898. Dalrymple, Hon. John James; 2nd Bn. Scots Guards.

1896. Danford, Bertram W. Y., R.E.; Bermuda.

75 1874. Danford, Charles G., F.Z.S.; Poklisa, Hatszeg, Hungary, and Conservative Club, St. James's Street, S.W.

1883. Davidson, James: Karwar, Kanara, Bombay, and 32 Drumsheugh Gardens, Edinburgh.

1899. Davies, Sutton A.; 2nd East Lancs. Regt., Rhaniket, Kumaon, N.W.P., India.

1891. De Vis, Charles W.; Queensland Museum, Brisbane, and care of B. Quaritch, 15 Piccadilly, W.

1893. De Winton, W. E.: Graftonbury, Hereford, and 59 Charlotte Street, Portland Place, W.

80 1896. Degli Oddi, Count Ettore Arrigoni, Professor of Zoology, the University, Padua; and Ca' oddo, Monselice, Padua, Italy.

1896. Dobbie, James B., F.Z.S., 2 Hailes Street, Edinburgh.

1889. Dobie, William Henry, M.R.C.S.; 2 Hunter Street, Chester.

1883. Doig, Scrope B.; Public Works Department, Bombay.

1895. Donovan, Surgeon-Capt. Charles, I.M.S., Civil Surgeon; Mangalore, South Canara, India.

85 1865. Dresser, Henry Eeles, F.L.S., F.Z.S.; 110 Cannon Street, E.C.

1896. Drewitt, Dr. Frederic, M.A., M.D., F.R.C.P.; 2 Manchester Square, W.

1890. Drummond-Hay, Capt. James A. G. (Coldstream Guards); Seggieden, Perth, N.B.

1878. Durnford, W. Arthur, J.P.; Elsecar, Barnsley.

1896. Duthie, Lt.-Col. W. H. M.; Row, Doune, Perthshire.

90 1870. Elliot, Daniel Giraud, F.R.S.E., F.Z.S.; Field Columbian Museum, Chicago, U.S.A.

Date of Election.

1895. Elliot, Edmund A. S., M.R.C.S.; Woodville, Kingsbridge, South Devon.

1884. Elliott, Algernon, Civil and Sessions Judge, Amraoti Camp, Berar, H.A.D., India.

1866. Elwes, Henry John, F.R.S., F.Z.S.; Colesborne, Andoversford, R.S.O., Gloucestershire.

1895. Erlanger, Freiherr Carlo von; Nieder Ingelheim, Rhein Hessen, Germany.

95 1879. Evans, Arthur Humble, M.A., F.Z.S.; 9 Harvey Road, Cambridge.

1888. Evans, William, F.R.S.E.; 38 Morningside Park, Edinburgh.

1892. Fairbridge, William George: 133 Long Market Street, Capetown, South Africa.

1895. Falconer, John J. M.; Magdalene College, Cambridge.

1894. Farquhar, Capt. Arthur M., R.N.; Granville Lodge, Aboyne, N.B., and H.M.S. 'Wallaroo,' Australian Station.

100 1898. Farquhar, Commr. Stuart St. J., R.N.; H.M.S. 'Pembroke,' Chatham, and Drumnagesk, Aboyne, N.B.

1873. Feilden, Col. Henry Wemyss, C.M.Z.S.; West House, Wells, Norfolk, and Junior United Service Club, S.W.

1897. Fenwick, Edward Nicholas Fenwick; Oxford and Cambridge Club, Pall Mall, S.W.

1886. Ferguson, Lieut. Harold Stuart, Nair Brigade; Trevandrum, Travancore.

1892. Finn, Frank, B.A., F.Z.S.; Indian Museum, Calcutta.

105 1890. Fisher, Lionel; Kandy, Ceylon.

1884. Forbes, Henry Ogg, LL.D., F.Z.S.; Free Public Museums, Liverpool.

1898. Foster, George E.; Brooklands, Cambridge.

1880. Foster, William; Braeside, The Heath, Weybridge.

1887. Fowler, William Warde, M.A.; Lincoln College, Oxford.

110 1865. Fox, Rev. Henry Elliott, M.A.; The Croft, Lytton Grove, Putney Hill, S.W.

1881. Freke, Percy Evans; 7 Limes Road, Folkestone.

1895. Frohawk, Frederick William; 10 St. Luke's Road, Brighton.

1881. Gadow, Hans, Ph.D., F.R.S., F.Z.S.; University Zoological Museum, Cambridge.

1886. Gainsborough. Charles William Francis, Earl of; Exton Park, Oakham.

Date of Election.

115 1892. Gerrard, John; Government Inspector of Mines; Worsley, near Manchester.

1879. Gibson, Ernest; Los Ingleses, Ajó, Buenos Aires.

* 1858. Godman, Frederick DuCane, D.C.L., F.R.S., F.Z.S.; 10 Chandos Street, Cavendish Square, W. *President.*

* 1858. Godman, Percy Sanden, B.A., C.M.Z.S.; Muntham, Horsham.

1899. Gould, Frank Herbert Carruthers; 3 Endsleigh Street, Endsleigh Gardens, W.C.

120 1895. Grabham, Oxley, M.A.; Chestnut House, Heworth, Yorks.

1890. Grant, William R. Ogilvie; 26 Hereford Square, S.W.

1885. Guillemard, F. H. H., M.A., M.D., F.Z.S.; Old Mill House, Trumpington, Cambridge.

1876. Günther, Albert C. L. G., M.A., M.D., F.R.S., F.Z.S.; 2 Lichfield Road, Kew Gardens, S.W.

1898. Gurney, Lieut. Anthony Francis, R.N.; North Runcton Hall, King's Lynn, and H.M.S. 'Widgeon,' Cape of Good Hope Station.

125 1870. Gurney, John Henry, F.Z.S.; Keswick Hall, Norwich, and Athenæum Club, Pall Mall, S.W.

1897. Gurney, J. Nigel; Sprowston Hall, Norwich.

1896. Gurney, Robert; Sprowston Hall, Norwich.

1890. Gwatkin, Joshua Reynolds Gascoign; The Manor House, Potterne, Devizes.

1891. Haigh, George Henry Caton; Grainsby Hall, Great Grimsby, Lincolnshire.

130 1898. Haines, Charles Reginald, M.A.; Meadhurst, Uppingham, Rutland.

1887. Haines, John Pleydell Wilton; The Lodge, Gloucester.

1898. Hale, Rev. James Rashleigh, B.A.; Yalding, Kent.

1886. Hamilton, Edward, M.D., F.L.S., F.Z.S.; 16 Cromwell Place, S.W.

1883. Harcourt, Lewis Vernon; Malwood, Lyndhurst, Hants.

135 1893. Hartert, Ernst; The Museum, Tring, Herts.

1868. Harting, James Edmund, F.L.S., F.Z.S.; Linnean Society, Burlington House, Piccadilly, W.

1896. Hartland, John Coles; c/o Messrs. Hunt & Co., P.O. Box 11, Yokohama, Japan.

1893. Hartmann, William; Tangley Mere, Chilworth, Surrey.

Date of Election.

1899. Harvey, Capt. Robert Napier, R.E.; Stanhope Lines. Aldershot.

140 1873. Harvie-Brown, John A., F.Z.S.; Dunipace House, Larbert, N.B.

1898. Hawker, Richard M., F.Z.S.; Bath Club, Dover Street, W., and c/o A. Scott, Esq., 149 Leadenhall Street, E.C.

1887. Hebbert, Charles T., F.Z.S.; The Rhodrons, Hook, Kingston-on-Thames.

1899. Heywood, Richard; St. Margaret's Place, King's Lynn, Norfolk.

1895. Hinxman, Lionel W., B.A.; Geological Survey of Scotland, Edinburgh.

145 1884. Holdsworth, Charles James, J.P.; Kendal, Westmoreland.

1877. Holdsworth, Edmund W. H., F.Z.S.; South Town, Dartmouth, Devon.

1891. Holland, Arthur H.; Estancia Sta. Elena, Halsey, F. C. O., Argentine Republic, and Holmhurst, Copse Hill, Wimbledon, S.W.

1888. Horsfield, Herbert Knight; Ivy Lodge, Chapel Allerton, Leeds.

1893. Hose, Charles, F.Z.S.; Baram, Sarawak, Borneo.

150 1895. Howard, Henry Eliot; Stone House, Kidderminster.

1881. Howard, Robert James; Shearbank, Blackburn, Lancashire.

* 1858. Hudleston, Wilfrid Hudleston, M.A., F.R.S., F.Z.S.; 8 Stanhope Gardens, S.W.

1893. Hudson, William Henry, F.Z.S.; Tower House, St. Luke's Road, Westbourne Park, W.

1869. Hume, Allan Octavian, C.B., C.S.I., F.Z.S.; The Chalet, Kingswood Road, Upper Norwood, S.E.

155 1890. Hunter, Henry Charles Vicars; Mawley Hall, Cleobury Mortimér, Salop.

1870. Hylton, Hedworth Hylton, Lord, F.Z.S.; Merstham House, Red Hill, Surrey.

1870. Irby, Lieut.-Col. Leonard Howard, F.Z.S.; 14 Cornwall Terrace, Regent's Park, N.W.

1888. Jackson, Frederick J., C.B., F.L.S.; The Red House, Aldeburgh, Suffolk.

1892. James, Henry Ashworth; 11 Oxford Square, Hyde Park, W.

160 1896. Jesse, William; La Martinière College, Lucknow, Oudh, India.

Date of Election.

1889. Johnson, Frederick Ponsonby; Castlesteads, Brampton, Cumberland.

1891. Johnston, Sir Harry Hamilton, K.C.B., F.Z.S.; H.B.M.'s Commissioner, Uganda, British East Africa.

1899. Jourdain, The Rev. Francis Charles Robert, M.A.; Clifton Vicarage, near Ashbourne, Derbyshire.

1880. Kelham, Major Henry Robert (1st Bn. Highland Light Infantry); 2 Salisbury Road, Hove, Brighton.

165 1894. Kelsall, Capt. Harry Joseph, R.A.; Rangoon.

1897. Kelsall, Rev. John Edward, M.A.; Milton Rectory, Lymington, Hants.

1882. Kermode, Philip M. C.; Hillside, Ramsay, Isle of Man.

1891. Kerr, J. Graham; Christ's College, Cambridge.

1895. Kingsford, William Edward; Maybury Road, Woking, Surrey.

170 1882. Knubley, Rev. Edw. Ponsonby, M.A.; Steeple Ashton Vicarage, Trowbridge.

1892. Laidlaw, Thomas Geddes; Bank of Scotland, Morningside Branch, Edinburgh, and 8 Morningside Road, Edinburgh.

1884. Langton, Herbert; 11 Marlborough Place, Brighton.

1881. Lascelles, Hon. Gerald; Queen's House, Lyndhurst.

1892. La Touche, John David Digues, C.M.Z.S.; Chinese Imperial Maritime Customs, Foochow, China, and 15 Rue Faraday, Paris.

175 1892. Laws, Arthur Moore; Buluwayo Engineering and Wagon Works, Buluwayo, Matabeleland, South Africa.

1898. Learoyd, A. Ernest; Rawthorpe Hall, Huddersfield.

1876. Legge, Col. William Vincent (late R.A.), F.Z.S.; Cullenswood House, St. Mary's, Tasmania.

1898. Le Souëf, Dudley; Zoological and Acclimatisation Society, Zoological Gardens, Melbourne.

1868. Le Strange, Hamon, F.Z.S.; Hunstanton Hall, King's Lynn, Norfolk.

180 1875. L'Estrange, Col. Paget Walter, R.A.; Llwynbedw, Boncath, R.S.O., South Wales.

1893. Lewis, Frederick; Assistant Conservator of Forests, c/o The Forest Department, Colombo, Ceylon.

1889. Leyland, Christopher John; Haggerston Castle, Beal, Northumberland.

1897. Lilford, John, Lord, F.Z.S.; Lilford Hall, Oundle, Northants.

1874. Lloyd, Col. John Hayes, F.Z.S.; 95 Adelaide Road, N.W.

Date of Election.

185 1898. Loat, William Leonard S., F.Z.S.; Newland, Coleford, Gloucestershire, and The School of Medicine, Cairo, Egypt.

1897. Lodge, George Edward, F.Z.S.; 5 Verulam Buildings, Gray's Inn, W.C.

1889. Loyd, Major Arthur Purvis, F.Z.S. (late 21st Hussars); Harnham Cliff, Salisbury.

1896. Lubbock, Percy; 26 Cadogan Gardens, S.W., and King's College, Cambridge.

1877. Lumsden, James, F.Z.S.; Arden House, Alexandria, N.B.

190 1896. Luttman-Johnson, James Arthur, M.A., F.Z.S.; 101 Mount Street, W.

1897. McLean, John Chambers; Waikohu Station, Te Karaka, Gisborne, New Zealand.

1899. Macmillan, George Augustin; 19 Earl's Terrace, Kensington, W.

°1894. Macpherson, Arthur Holte; 51 Gloucester Terrace, Hyde Park, W.

1886. Macpherson, Rev. Hugh Alexander, M.A.; Allonby Vicarage, Maryport, Cumberland.

195 1875. Malcolm of Poltalloch, John Wingfield, Lord, C.B., F.Z.S.; Poltalloch, Lochgilphead, Argyllshire, and 23 Great Cumberland Place, W.

1899. Marais, Johann van Oosterzee; Forest Department, Knysna, Cape Colony.

1894. Marshall, Archibald McLean; Ard's Place, Aberlady, Longniddry, N.B., and 29 Queen's Gate Gardens, S.W.

1894. Marshall, James McLean; Ard's Place, Aberlady, Longniddry, N.B.

1899. Martin, Basil William; 7 Holly Place, Hampstead, N.W., and Darley Abbey, Derby.

200 1897. Mason, Col. Edward Snow; 20 Minster Yard, Lincoln.

1898. Massey, Herbert; Ivy Lea, Burnage, Didsbury, Manchester.

1878. Mathew, Rev. Murray A., M.A., F.L.S.; Buckland Dinham, Frome, Somersetshire.

1899. Mathews, Arnold; Ballynahinch Castle, Toombeola, Co. Galway.

1898. Maxwell, Aymer Edward; 3rd Bn. Grenadier Guards, Chelsea Barracks, S.W.

205 1896. Maxwell, Rt. Hon. Sir Herbert E., Bt., P.C., M.P., F.R.S.; 49 Lennox Gardens, S.W.

Date of Election.

1883. Meade-Waldo, Edmund Gustavus Bloomfield, F.Z.S.; Stonewall Park, Edenbridge, Kent.

1899. Meinertzhagen, Richard; Mottisfont Abbey, Romsey; and Royal Fusiliers, Naisarabad, Bombay.

1886. Millais, John Guille, F.Z.S.; Melwood, Horsham.

1879. Mitchell, Frederick Shaw; Clyderhowe, Edmonton, Alberta, N.W.T., Canada.

210 1897. Mitchell, William; 5 Bury Street, St. James's, S.W.

1892. Mivart, St. George, Ph.D., M.D., F.R.S., F.Z.S.; 77 Inverness Terrace, W., and Oriental Club, Hanover Square, W.

1890. Monk, Thomas James; St. Anne's, Lewes, Sussex.

1898. Monro, Horace Cecil; Queen Anne's Mansions, Queen Anne's Gate, S.W.

1886. Muirhead, George; Speybank, Fochabers, Co. Moray, N.B.

215 1893. Mullens, William H., M.A., F.Z.S.; 9 St. James's Place, S.W.

1892. Munn, Philip Winchester; Laverstoke, Whitchurch, Hants.

1897. Munt, Henry; 83 Kensington Gardens Square, W.

1885. Neale, Edward; 43 Charlotte Street, Portland Place, W.

1882. Nelson, Thomas Hudson; The Cliffe, Redcar, Yorkshire.

220 1895. Nesham, Robert; Utrecht House, Queen's Road, Clapham Park, S.W.

1897. Neumann, Oscar; 10 Potsdamer Strasse, Berlin, W.

1898. Newall, Arthur; Wilsford House, Salisbury.

1872. Newcome, Francis D'Arcy William Clough; Feltwell Hall, Brandon, Suffolk.

1899. Newman, John Leonard; Park Field, Mill Hill, Middlesex.

225 *1858. Newton, Alfred, M.A., F.R.S., F.Z.S., Professor of Zoology in the University of Cambridge; Magdalene College, Cambridge.

1886. Nicholls, Howard Hill John, M.R.C.S.; Bramber Lodge, Downview Road, West Worthing.

1876. Nicholson, Francis, F.Z.S.; 84 Major Street, Manchester, and Heathside, Knutsford, Cheshire.

1895. Noble, Heatley; Temple Combe, Henley-on-Thames.

1887. Norman, George Cameron, F.Z.S.; 68 Lombard Street E.C., and Mount Melville, St. Andrews, N.B.

230 1882. Oates, Eugene William, F.Z.S.; 1 Carlton Gardens, Ealing, W., and Savage Club, Adelphi Terrace, W.C. *Secretary and Treasurer.*

1892. Ogilvie, Fergus Menteith, M.A., F.Z.S.; 5 Evelyn Mansions, Carlisle Place, Victoria Street, S W.

Date of Election.

1889. Ogle, Bertram Savile; Hill House, Steeple Aston, Oxford.

1883. Parker, Henry, C.E., F.Z.S., Irrigation Officer, P.W.D.; Kurunegala, Ceylon.

1880. Parkin, Thomas, M.A., F.Z.S.; Fairseat, High Wickham, Hastings.

235 1891. Patterson, Robert, F.Z.S.; Malone Park, Belfast.

1884. Patterson, R. Lloyd, F.L.S.; Croft House, Holywood, Co. Down.

1894. Pearson, Charles Edward; Chilwell House, near Nottingham.

1891. Pearson, Henry J.; Bramcote, Notts.

1898. Penn, Eric Frank; Taverham Hall, Norwich.

240 1891. Penrose, Frank, M.D.; 84 Wimpole Street, W.

1886. Phillips, E. Lort, F.Z.S.; 79 Cadogan Square, S.W.

1888. Phillips, George Thorne; Wokingham, Berkshire.

1893. Pigott, Thomas Digby, C.B.; 5 Ovington Gardens, S.W.

1893. Pike, Thomas Mayer, M.A.; care of Mr. Porter, 7 Prince's Street, Cavendish Square, W.

245 1899. Pope, Walter Henry; 2 Hanover Terrace, Weymouth.

1896. Popham, Hugh Leyborne, M.A.; 21 Ryder Street, St. James's, S.W., and Oxford & Cambridge Club, Pall Mall, S.W.

1898. Price, Athelstan E.; Broxbourne, Herts.

1893. Pycraft, William Plane; British Museum (Natural History), Cromwell Road, S.W.

1888. Radclyffe, Charles Robert Eustace; Hyde, Wareham, Dorset.

250 1879. Rawson, Herbert Evelyn, F.Z.S.; Fallbarrow, Windermere.

1894. Read, Richard Henry, L.R.C.P., M.R.C.S.; Church Street, Hanley.

1888. Read, Robert H.; 7 South Parade, Bedford Park, W.

1877. Reid, Capt. Savile G. (late R.E.), F.Z.S.; The Elms, Yalding, Maidstone.

1893. Rendall, Percy, M.D., F.Z.S.; Oxenwood, Cheam, Surrey, and Devonshire Club, St. James's Street, S.W.

255 1895. Rickett, Charles Boughey; Hong Kong and Shanghai Bank, Foochow; care of H. S. King & Co.

1896. Rippon, Major George, F.Z.S.; 29th Madras Infantry, Fort Stedman, Burma, and c/o Messrs. William Watson & Co., Bombay.

Date of Election.

1898. Robinson, Herbert C.; Holmwood, Aigburth, Liverpool.

1896. Rogers, Capt. J. Middleton, F.Z.S.; 1st (Royal) Dragoons, and Riverhill, Sevenoaks, Kent.

1893. Rothschild, The Hon. L. Walter, M.P., D.Sc., F.Z.S.: The Museum, Tring, Herts.

260 1894. Rothschild, The Hon. N. Charles, F.Z.S.: Tring Park, Tring, Herts.

1883. St. Quintin, William Herbert, F.Z.S.; Scampston Hall, Rillington, Yorkshire.

1899. Sapsworth, Arnold Duer, F.Z.S.; Higham Lodge, Woodford Green, Essex.

1870. Saunders, Howard, F.L.S., F.Z.S.; 7 Radnor Place, Hyde Park, W. *Editor 'Ibis.'*

1898. Scherren, Henry, F.Z.S.; 9 Cavendish Road, Harringay, N.

265 *1858. Sclater, Philip Lutley, M.A., Ph.D., F.R.S., Secretary to the Zoological Society of London, 3 Hanover Square, W., and Odiham Priory, Winchfield. *Editor 'Ibis.'*

1891. Sclater, William Lutley, M.A., F.Z.S.; South African Museum, Capetown, South Africa.

1899. Selous, Frederick Courteney, F.Z.S.; Alpine Lodge, Worplesdon, Surrey.

1889. Senhouse, Humphrey Patricius, B.A.; The Fitz, Cockermouth, Cumberland.

1899. Serle, The Rev. William, M.A., B.D.; 35 Bridge Street, Musselburgh, N.B.

270 1899. Sharman, Frederic; Yate Lodge, Bedford.

1871. Sharpe, Richard Bowdler, LL.D., F.L.S., F.Z.S.; Assistant Keeper, Zoological Department, British Museum (Natural History), South Kensington, S.W.

1870. Shelley, Capt. G. Ernest, F.Z.S. (late Grenadier Guards); 42 Queen's Gate Terrace, S.W.

1865. Shepherd, Rev. Charles William, M.A., F.Z.S.; Trottiscliffe Rectory, Maidstone, Kent.

1882. Slater, Rev. Henry H., M.A., F.Z.S.; Thornhaugh Rectory, Wansford, Northants.

275 1896. Sondes, Earl; Lees Court, Faversham.

1881. Southwell, Thomas, F.Z.S.; 10 The Crescent, Chapel Field, Norwich.

Date of Election.

1893. Stanley, Samuel S.: 3 Regent Grove, Leamington, Warwickshire.

1875. Stark, Arthur Cowell, M.B. & C.M. (Edin.), F. R. Phys. Soc. (Edin.); Eccleston, Torquay; and Bertram House, Capetown, South Africa.

1898. Stirling, William, J.P., D.L. Co. Ross; Monar, Ross, and Kinellan Lodge, Strathpeffer, N.B.

280 1889. Stoate, William; Ashleigh, Burnham, Somerset.

1893. Stonham, Charles, F.R.C.S., F.Z.S.; 4 Harley Street, Cavendish Square, W.

1897. Streatfeild, Capt. Eric; 2nd Gordon Highlanders, Aldershot.

1881. Studdy, Col. Robert Wright (late Manchester Regiment); Waddeton Court, Brixham, Devon.

1887. Styan, Frederick William, F.Z.S.; Ben Craig, Bayham Road, Sevenoaks, and Shanghai, China.

285 1887. Swinburne, John; Carlton Lodge, Câtel, Guernsey.

1882. Swinhoe, Col. Charles (Indian Staff Corps), M.A., F.L.S., F.Z.S.; Avenue House, Cowley Road, Oxford.

1884. Tait, William Chaster, C.M.Z.S.; Entre Quintas 155, Oporto, Portugal.

* 1858. Taylor, Edward Cavendish, M.A., F.Z.S.; 74 Jermyn Street, S.W.

1873. Tegetmeier, William Bernhard, F.Z.S.; 16 Alexandra Grove, North Finchley, N.

290 1889. Tennant, Edward Priaulx; 40 Grosvenor Square, W., and The Glen, Innerleithen, N.B.

1886. Terry, Major Horace A. (late Oxfordshire Light Infantry); The Lodge, Upper Halliford, Shepperton.

1893. Thorpe, Dixon L.; Loshville, Etterby Scaur, Carlisle.

1894. Ticehurst, Norman Frederic; Guy's Hospital, S.E.

1893. Trevor-Battye, Aubyn B. R., F.Z.S.; 2 Whitehall Gardens, S.W.

295* 1858. Tristram, Rev. Henry Baker, M.A., LL.D., F.R.S., C.M.Z.S., Canon of Durham; The College, Durham.

1864. Upcher, Henry Morris, F.Z.S.; East Hall, Feltwell, Brandon, Norfolk.

1896. Urwick, William F.; 27 Bramham Gardens, S.W.

1894. Ussher, Richard John; Cappagh House, Cappagh, R.S.O., Mallow, Co. Waterford, Ireland.

1890. Venour, Stephen; Fern Bank, Altrincham, Cheshire.

Date of Election.

300 1884. Verey, Alfred Sainsbury; Heronsgate, near Rickmansworth.

1881. Verner, Lt.-Col. William Willoughby Cole (2nd Bn. Rifle Brigade); Royal Military College, Camberley, Surrey, and Junior United Service Club, S.W.

1886. Wade-Dalton, Col. H. D.; Hauxwell Hall, Finghall, R.S.O., Yorkshire.

1895. Wallis, Henry Marriage; Ashton Lodge, Reading.

1881. Walsingham, Thomas, Lord, F.R.S., F.Z.S.; Merton Hall, Thetford, Norfolk.

305 1899. Walton, Herbert James, M.B., F.R.C.S.; Indian Medical Service, c/o Messrs. King, King, & Co., Bombay.

1872. Wardlaw-Ramsay, Lt.-Col. R. G., F.Z.S.; Whitehill, Rosewell, Midlothian, N.B.

1896. Watkins, Watkin; Highfield, Harrow, and Wellington Club, S.W.

1891. Whitaker, Benjamin Ingham; Hesley Hall, Tickhill, Rotherham.

1891. Whitaker, Joseph I. S.; Malfitano, Palermo, Sicily.

310 1887. Whitehead, Jeffery; Newstead, Wimbledon, Surrey.

1897. Whymper, Charles; 7 James Street, Haymarket, S.W.

1898. Wiglesworth, Joseph, M.D.; County Asylum, Rainhill, Lancs.

1899. Wiglesworth, Lionel W.; 42 Gloucester Place, Portman Square, W.

1894. Wilkinson, Johnson; Vermont, Huddersfield, Yorkshire.

315 1896. Williams, Lionel A.; Llangurran, Salisbury; 91 Victoria Street, S.W., and Isthmian Club, Piccadilly, W.

1897. Wilson, Allan Reid; Easthill, East Bank Road, Sheffield.

1888. Wilson, Charles Joseph; 34 York Terrace, Regent's Park, N.W.

1887. Wilson, Scott Barchard, F.Z.S.; Heatherbank, Weybridge Heath, Surrey.

1897. Witherby, Harry F.; Heathfield, Eliot Place, Blackheath, S.E.

320 1899. Wollaston, Alexander Frederick Richmond, B.A.; 19 Upper Gloucester Place, N.W., and King's College, Cambridge.

1875. Wright, Charles A., F.L.S., F.Z.S.; Kayhough, Kew Gardens Road, Kew, S.W.

1871. Wright, E. Perceval, M.D., F.L.S., F.Z.S., Professor of Botany in the University of Dublin.

Date of
Election.

1891. Wright, Thomas, M.D.; Castle Place, Nottingham.

1876. Wyatt, Claude W.; Adderbury, Banbury.

325 1895. Yerbury, Lt.-Col. John William (late R.A.), F.Z.S.; 8 Duke Street, St. James's, S.W., and Army and Navy Club, S.W.

1889. Young, Capt. James B., R.N.; Ridgway House, Ottery St. Mary, Devon.

1878. Young, John, F.L.S., F.Z.S.; 64 Hereford Road, Bayswater.

1897. Young, John Joseph Baldwin, M.A.; Richmond Park, near Sheffield.

Extra-Ordinary Members.

1899. Godwin-Austen, Lt.-Col. Henry Haversham, F.R.S., F.Z.S.; Shalford Park, Guildford.

1860. Wallace, Alfred Russel, F.R.S., F.Z.S.; Corfe View, Parkstone, Dorset.

Honorary Members.

1886. Ayres, Thomas; Potchefstroom, Transvaal.

1890. Berlepsch, Graf Hans von, C.M.Z.S.; Schloss Berlepsch, Post Gertenbach, Witzenhausen, Germany.

1860. Cabanis, Dr. Jean, C.M.Z.S.; Friedrichshagen, bei Berlin.

1870. Finsch, Dr. Otto, C.M.Z.S.; Zool. Rijks Museum, Leiden.

5 1894. Giglioli, Dr. Henry Hillyer, F.M.Z.S.; Reale Istituto di Studi Superiori, Florence.

1898. Goeldi, Dr. Emil A., C.M.Z.S.; Director of the Museu Paraense, Pará, Brazil.

1860. Hartlaub, Dr. Gustav, F.M.Z.S.; Bremen.

1860. Layard, Edgar Leopold, C.M.G., F.Z.S.; Otterbourne, Budleigh Salterton, Devonshire.

1893. Reichenow, Dr. Anton, C.M.Z.S.; Museum für Naturkunde, Invalidenstrasse, Berlin.

10 1890. Salvadori, Count Tommaso, M.D., F.M.Z.S.; Royal Zoological Museum, Turin.

Foreign Members.

1890. Allen, Joel Asaph, Ph.D., C.M.Z.S.; American Museum of Natural History, Central Park, New York City, U.S.A.

1872. Bocage, Prof. J. V. Barboza du, C.M.Z.S.; Royal Museum, Lisbon.

Date of
Election.

1880. Bureau, Louis, M.D.; École de Médecine, Nantes.

1873. Collett, Prof. Robert, F.M.Z.S.; Zoological Museum, Christiania.

5 1872. Coues, Dr. Elliott, C.M.Z.S.; Smithsonian Institution, Washington, D.C.

1875. Doria, Marchese Giacomo, F.M.Z.S.; Strada Nuova, 6, Genoa, Italy.

1872. Fatio, Dr. Victor, C.M.Z.S., Geneva.

1872. Longchamps, Baron De Selys, Liége.

1866. Madarász, Dr. Julius von; National Museum, Buda-Pesth.

10 1894. Menzbier, Prof. Dr. Micheal, C.M.Z.S.; Imperial Society of Naturalists, Moscow.

1881. Meyer, Dr. Adolf Bernhard, C.M.Z.S., Director of the Royal Museum, Dresden.

1872. Milne-Edwards, Prof. Alphonse, F.M.Z.S.; Jardin des Plantes, Paris.

1890. Oustalet, Dr. Emile, C.M.Z.S.; Muséum d'Histoire Naturelle, Jardin des Plantes, Paris.

1894. Pleske, H.E. Dr. Theodor, F.M.Z.S.; Office of the Company "Nadeshda," St. Petersburg.

15 1872. Radde, Prof. Gustav, F.M.Z.S., Tiflis.

1880. Ridgway, Robert, C.M.Z.S.; Smithsonian Institution, Washington, D.C.

1894. Schalow, Herman; 15 Schleswiger Ufer, Berlin, N.W.

1896. Winge, Herluf; University Zoological Museum, Copenhagen.

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ERRATA.

Page 123, line 14 from top, for *S. nipalensis* read *B. nipalensis.*
,, 141, ,, 18 from top, for *Pt. lencopareius* read *Pt. leucopareius.*
,, 153, ,, 19 from bottom, *for* ullu | strata *read* illu | strata.
,, 154, ,, 6 from top, *for* 1829–30, *read* 1529–30.
,, 373, ,, 9 from top, for *Macrophenus* read *Macrosphenus.*
,, 506, ,, 8 from bottom, for *Pyranga æstiva* read *Pyranga rubra.*

THE IBIS.

SEVENTH SERIES.

No. XVII. JANUARY 1899.

I.—*On the Occurrence of Radde's Bush-Warbler* (Lusciniola schwarzi) *in England.* By Howard Saunders.

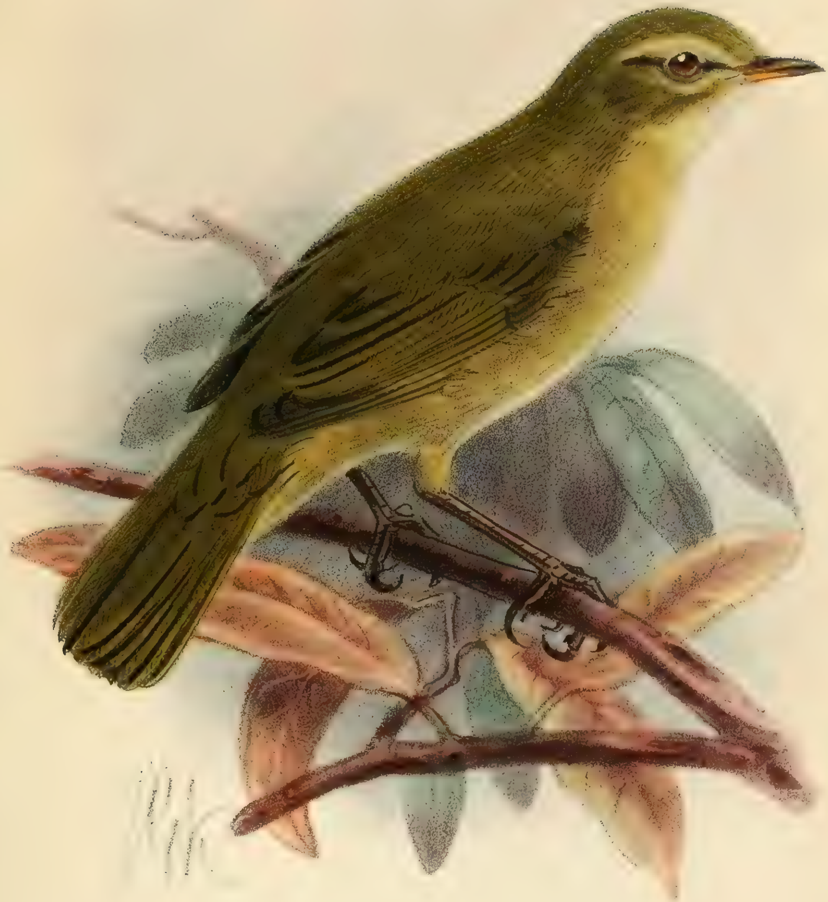
(Plate I.)

For the discovery in England of this Warbler from Eastern Siberia ornithologists are indebted to the persistent researches of Mr. G. H. Caton Haigh. On the 1st of October last, according to his custom at the time of migration, Mr. Haigh was diligently "working" the hedgerows which border the long sea-banks on the Lincolnshire side of the Humber, and, when near North Cotes (where he obtained the first British specimen of the Greenish Willow-Warbler), he was attracted by a strange and particularly powerful note. Thereupon the hedgerow was thoroughly beaten out, and the owner of the loud voice proved to be the Warbler in question—a bird about the size of a Wood-Wren. Easterly winds had been prevalent for some time.

Radde discovered this Warbler in a kitchen-garden at Kulussutajevsk, near the Tarei-nor, Transbaikalia, on the 22nd of September, 1856, and named it *Sylvia* (*Phyllopneuste*) *schwarzi*, after his friend, the astronomer to the expedition (Reis. Süd. Ost-Sibir. Bd. ii. pp. 260–263, tav. x. figs. 1–3). He afterwards found it in the Chingan Mountains. Dybowsky met with it in Daüria and the Ussuri country; Schrenck in the Amur Valley, and Dr. Nikolski in the south-western forests of the Island of Saghalien. From the dates at which specimens were obtained, the bird evidently breeds in these districts, but nothing is known of its nidification. The most detailed account of this Warbler is by Godlewski, who writes to the following effect :—On its migrations this species is common throughout South-eastern Siberia and in Daüria, and is widely distributed in autumn; but it is rarer in Ussuria, though it appears to nest there, for it sings all through the summer. In the early part of August, during our journey across the Government of Yeniseisk, on the road between Irkutsk and Tomsk, it was also singing, so that it probably nests there. On passage it frequents the bushy margins of the forests, and it arrives early in June. Its song is short and not very agreeable, but loud, and the alarm-note may be rendered as *gibout-gibout*. We did not find its nest. It leaves Ussuria about the middle of September.

In winter Radde's Bush-Warbler visits Southern China, Pegu, and the northern and central portions of Tenasserim (Oates, Fauna Brit. India, Birds, i. pp. 399–400). Its large bastard-primary indicates its connection with the genus *Lusciniola,* in which Seebohm placed it ; but Mr. Oates finds this genus too comprehensive, and relegates the bird to the genus *Herbivocula* of Swinhoe. The upper plumage is olive-brown, tinged with tawny, especially on the rump ; wings and tail brown, edged on the outer webs with the colour of the back ; supercilium very distinct and reaching to the nape ; lores and feathers behind the eye dark brown ; ear-coverts buff and brown ; lower plumage rich tawny buff, paling on the throat and abdomen ; axillaries and under wing-coverts buff. In summer the lower parts are nearly white, merely tinged with yellow or buff, more especially so on the vent and under tail-coverts. Bill horn-colour, the base fleshy white and the gape yellow ; iris brown ; legs and feet fleshy yellow. Length about 5–6 inches, wing 2·45, tarsus 0·9 inch, bill from gape 0·65. The 2nd primary is equal to the 8th, or intermediate between the 7th and 8th ; the 1st primary is very long, measuring 0·85 inch in length (Oates).

The young bird, like Mr. Haigh's specimen from which the figure (Plate I.) is taken, is decidedly more olivaceous on the upper parts. The bill is stout and deep for a



J. G. Keulemans del. et lith.

Mintern Bros. imp.

LUSCINIOLA SCHWARZI.

Warbler, and the three rictal bristles are very strong, but the supplementary hairs do not extend up the culmen nor cover the nostrils as in *Phylloscopus* (Oates).

The following are the principal references:—

Sylvia (*Phyllopneuste*) *schwarzi* Radde, Reis. Süd. Ost-Sibir. Bd. ii. p. 260, t. ix. f. *a, b, c* (1863).

Phylloscopus brooksi Hume, S. F. ii. p. 505 (1874); v. p. 134.

Neornis flavolivacea Hodgs. apud Hume, S. F. iii. p. 139; Oates, S. F. x. p. 221.

Phylloscopus schwarzi Brooks, S. F. iv. p. 277; Hume & Dav. S. F. vi. p. 353; Hume, Cat. no. 556 *ter*; Bingham, S. F. ix. p. 186.

Lusciniola schwarzi (Radde), Seebohm, Cat. B. M. v. p. 128; Tacz. Ornith. Sibérie (Mém. Acad. Sci. St. Pétersb. sér. 7, xxxix.), p. 276.

Herbivocula schwarzi Oates, B. of Brit. Burmah, i. p. 91; id. Fauna Brit. India, Birds, i. p. 399.

Lusciniola (*Herbivocula*) *schwarzi* Pleske, Orn. Rossica, ii. p. 388, t. iii. f. 1, 2.

I add a list of the specimens of *Lusciniola schwarzi* in the collection of the British Museum:—

a. ♂ ad. sk.	Kultuk, Lake Baikal, June 15, 1876 (*Dr. Dybowsky*).	H. Seebohm [P.]. (Specimen *a* in B. M. C.)
b. ♂ ad. sk.	Kultuk, Lake Baikal, June 15, 1876 (*Dr. Dybowsky*).	Seebohm Coll.
c. ♂ ad. sk.	Lake Baikal, June 7, 1877 (*Dr. Dybowsky*).	Seebohm Coll.
d. ♂ ad. sk.	Lake Baikal, June 11, 1877 (*Dr. Dybowsky*).	Seebohm Coll.
e. ♂ ad. sk.	Lake Baikal, June 13.	Seebohm Coll.
f. ♂ ad. sk.	Lake Baikal, June 11, 1877.	Tweeddale Coll.
g. Ad. sk.	Tientsin, China (*R. Swinhoe*).	Seebohm Coll.
h. ♀ ad. sk.	Thayetmyo, Pegu, Jan. 10, 1873.	E. W. Oates [C.].
i. Ad. sk.	Kyeikpadein, Lower Pegu, Mar. 1881.	E. W. Oates [C.].
k. ♂ ad. sk.	Yeaboo, Tenasserim, Dec. 21, 1878 (*J. Darling*).	Hume Coll.
l. ♂ ad. sk.	Pahpoon, Tenasserim, Dec. 24, 1873 (*W. Davison*).	Hume Coll.

m. ♀ ad. sk.	Pahpoon, Tenasserim, Jan. 13, 1874 (*W. D.*).	Seebohm Coll.
n. ♂ ad. sk.	Myawadee, Tenasserim, Jan. 21, 1877 (*W. D.*).	Hume Coll.
o. ♂ imm. sk.	Thoungyeen R., Tenasserim, Mar. 4, 1880 (*C. T. Bingham*).	Hume Coll.
p. ♀ ad. sk.	Wimpong, Tenasserim, Dec. 20, 1876 (*W. D.*).	Hume Coll.
q. ♂ ad. sk.	Kaukaryit, Tenasserim, Jan. 10, 1877 (*W. D.*).	Hume Coll.
r. ♂ ad. sk.	Kaukaryit, Tenasserim, Jan. 14, 1877 (*W. D.*).	Hume Coll.

II.—*A Day's Egging on the Sandbanks of the Ganges.*

By William Jesse.

In writing this account of a day spent in hunting sandbanks for the eggs of the Terns and Plovers, I cannot help feeling that I am going over ground well known and somewhat stale; but, as it is just possible that there may be some other oologist as enthusiastic, but as inexperienced in this particular line as myself, I think that my remarks may have some slight interest.

None of the Terns and Plovers that haunt our large Indian river-systems breed in the immediate vicinity of Lucknow, the Goomti not being a stream broad enough to furnish the flats and islands patronized by these birds.

I had made one short trip down the Ganges from Cawnpore in the middle of March, through the kindness of Mr. Fisher, of the Bank of Bengal, but, partly owing to the somewhat early date, and partly to my ignorance of the habits of the birds, I was unsuccessful. However, in the second week in April last I found I could get a few days' leave, and promptly wrote to my friend Mr. Wildeblood, District Engineer at Fatehgarh, to acquaint him of the fact, and to say that I intended to come over to him with all speed, bent on oological discoveries.

On the 5th of April therefore I entered the train, thoroughly equipped for my expedition, and with the Indian oologist's "*sine quâ non,*" Hume's 'Nests and Eggs,' and a copy of the 'Pioneer' to serve as my mental pabulum during the journey.

Ye Gods!!! what a journey! Travelling by train in Upper India in the month of April is not a thing to be undertaken lightly, and on this particular day the heat, dust, and glare were, if anything, worse than usual. Owing to a mistake in the Company's own time-tables I started three hours too early, and had to wait, therefore, in the Cawnpore Railway Station. Most fortunately, when I got into the Fatehgarh train, I found in the same carriage Mr. John Cockburn, of the Opium Department, who at one time used to collect for Mr. Hume, and had been a personal friend of the late Major Cock and others of that brilliant band of ornithologists who did so much in India in the seventies and early eighties, and who have now nearly all left the "land of regrets" for ever, causing a void which it will be hard to fill up. One of Mr. Cockburn's hobbies is the study of the Serpent-Eagles, and we passed away the time very pleasantly, and, in my case, most profitably, as we discussed various things connected with Indian bird-life.

According to Mr. Hume's works I was afraid that I should be rather late for many of the species, he seeming to have got most of his eggs (in the N.W.P.) in the third week in March and (in the Punjab) in April. However, a talk with Cockburn soon restored my confidence, and from him I got several hints as to commencing a search.

At length, after a journey the heat, dust, and general discomfort of which can be better imagined than described, I was more than thankful to find the train crawling into Fatehgarh Station, and to be able to exchange the stuffy railway-carriage for a seat in Wildeblood's tum-tum. Fatehgarh is a charming little Indian station, situated on the west bank of the Ganges, most of the bungalows, in Civil lines, being built along the cliffs overlooking the river-bed. Except during the rains, this bed is more or less dry sandy ground, covered with "jhao" jungle, a sort of tamarisk, and a great resort of wild swine. Fatehgarh, in fact, is one of the few stations now in Northern India where you can commence beating in the station itself, and come home with a boar or two by 10 o'clock, after a good morning's ride.

The following two or three days were spent in searching the country in the immediate vicinity of the station, but beyond a few eggs of the Egyptian Vulture (*Neophron ginginianus*), Stone-Plover (*Œdicnemus crepitans*), and Wire-tailed Swallow (*Hirundo smithii*), I got nothing worth mentioning. I finally made up my mind to spend the 9th on the river, searching the banks, and to make a long day of it. Accordingly the office babu, a most obliging man, was summoned, and orders were given that a boat was to be found and everything ready for starting early on the morrow. The tum-tum was at the door by 5.30 A.M., and after a light chota hazri we jumped in and found ourselves soon after 6 A.M. at Nathia Ghat, where our boat and men were in waiting. The boat was a small edition of the country craft, and very light and handy for its size. The middle portion had been planked over, and on the deck thus provided were placed chairs, provisions, guns, binoculars, and collecting-boxes.

It was a lovely morning when we pushed off, bright and cool, and giving no indication of the tremendous roasting we were to get later on. Slowly we drifted down stream, keeping our ears open for the faintest cry of a bird, and closely scanning every bit of sand with the glasses. The method of procedure is as follows:—As soon as you near a sandbank island—sand-spits not entirely surrounded by water are almost always useless—if you see any birds upon it, run the boat ashore, spread out your men in line, and beat the whole place very carefully. By this means, if there are eggs, you will not be likely to overlook them. We had drifted for some little time without meeting with anything, when the glasses revealed a Spur-wing Plover (*Hoplopterus ventralis*) sitting on the sand. Running the boat ashore, I walked straight up to the spot, and there in a slight hollow, unlined, except for one or two small pieces of drift, were four richly-marked eggs. These were not many days short of hatching out, but, by the exercise of a little patience, and with a little gentle persuasion from hook and blowpipe, they made very nice specimens. Although absolutely certain of the identity of these eggs, I shot the bird, much against my will, as it was the first clutch of this species that I had taken. About ten minutes after this we came upon another island, round which some Terns and several of the beautiful little Swallow-Plover (*Glareola lactea*) were wheeling. I could see at once, as we approached, that these birds had eggs, and, after a search, we were rewarded by several clutches of the Swallow-Plovers and a nice one of the Black-bellied Tern (*Sterna melanogaster*). Here I should have also found the eggs or young of the large River-Tern (*Sterna seena*), for a pair of these birds were in a wild state of excitement, dashing down within a foot or two of my head, but I was not successful and missed them.

For some time after this we drew blanks. We passed numerous sand-spits, but no islands. As we drifted along we saw numerous ghavials, their black bodies shining in the sun, but as we had no rifle we could not take a shot at them. Presently we came to a small island on which was a colony of the Skimmer or Scissor-bill Tern (*Rhynchops albicollis*). They apparently had only just begun to lay. In only five nests did we find eggs, and only one in each of these. As we robbed their nests these birds kept flying round us, uttering all the time their peculiar twittering cry, somewhat resembling that of a Sparrow.

The "loo" had now begun to blow in earnest, and although, when in mid-stream, its fierce heat was somewhat tempered by the water, the banks were like furnaces and the air was thick with whirling sand. Fortunately the wind was behind us, so that the discomfort was not so great as it would otherwise have been. After tiffin, Wildeblood, who was hardly so enthusiastic about eggs as myself, walked home, and I continued my voyage alone.

As the boat drifted down I saw numerous water-birds. In one gaggle of Geese I counted over 100, and in a flock of Swans over 40, besides various Ducks, chiefly Gadwalls, I think, though I did not shoot any. On one island I came across a pair of the Great Stone-Plover (*Esacus recurvirostris*), the eggs of which I was very anxious to get, but unfortunately they were not yet laid. Further on I found a number of nests of the Skimmer, but they were empty. However, as I got a fine clutch, though very hard-set, of the large River-Tern (*Sterna seena*), I was quite compensated. We also picked up one or two more clutches of the Spur-wing, and then I came upon a large colony of Swallow-Plovers, and we had a busy time collecting and marking the eggs. These little birds were most anxious about their treasures, and would come tumbling down, literally almost at one's feet, pretending a broken wing, and would go shuffling along, apparently hardly able to move, every now and then lying quite still, as if thoroughly exhausted, only to fly off immediately that any attempt was made to catch them. The birds usually lay their eggs on the damp soil, not far from the water's edge, but in this colony many had been laid in the shifting sand and were half buried in consequence. The nests were merely little circular hollows, about three inches across; often there was no hollow at all. The eggs lay, of course, on the bare sand, as often as not in the open, but sometimes partly concealed by a tuft of jhao or a piece of driftwood. Mr. Hume puts the number down as usually four, yet, strangely enough, all my eggs were in pairs or single, and numbers of them were very hard-set. Among this colony I found a clutch of the Black-bellied Tern. During the day the birds trust to the heat of the sun's rays, and merely stand by or wheel round over their eggs. One can form a pretty good estimate of the heat of the sands at this time of the year from the fact that Mr. Cockburn assured me that he once found a Skimmer's egg hard-baked.

After leaving this island I found a few more eggs of the Spur-wing and of the Black-bellied Tern, and then I had to stop. By this time the sun was sinking, and I had at least six miles to walk, so I set to work to blow my eggs. This was a somewhat tiring and lengthy job, as, altogether, I had taken 78 eggs. I had hoped to have got the nests of the Great Indian Stone-Plover, the Little Tern (*Sterna sinensis*), and the Ringed Plover (*Ægialitis dubia*); but the first two species had apparently not yet laid, and I did not see a single specimen of the third. On the whole, for my first attempt, I was more than satisfied, and my only wish is that I may enjoy many another day's hunting by Ganga's sacred stream. It does not become a tyro to make remarks on a single day's experiences, but I think it may be of interest to point out that, whereas Mr. Hume seems to have found mostly young birds after the third week in March in the Etawah district, a large number of my eggs were quite fresh on April 9th, although Fatehgarh is *east* of Etawah, and I did not see the sign of a young one on the many islands which I visited.

The following is the list of eggs taken:—

Hoplopterus ventralis	17	average (14)	1·61 × 1·12
Glareola lactea	44	„ (34)	1·03 × 0·86
Sterna seena	3	„	1·67 × 1·23
—— *melanogaster*	9	„	1·35 × 1·00
Rhynchops albicollis	5	„	1·58 × 1·17

Note.—Since writing this I have seen the 4th vol. of the 'Birds of India and Burmah,' and notice that no native name is given to the Terns.

In Oudh and the North-west Provinces I have always heard them called "Titri" by the boatmen, except *R. albicollis*, which is "Pancheera."

This Titri is not to be confounded with Titiri (pron. *titeeree*), the generic name for the Plovers.—W. J.

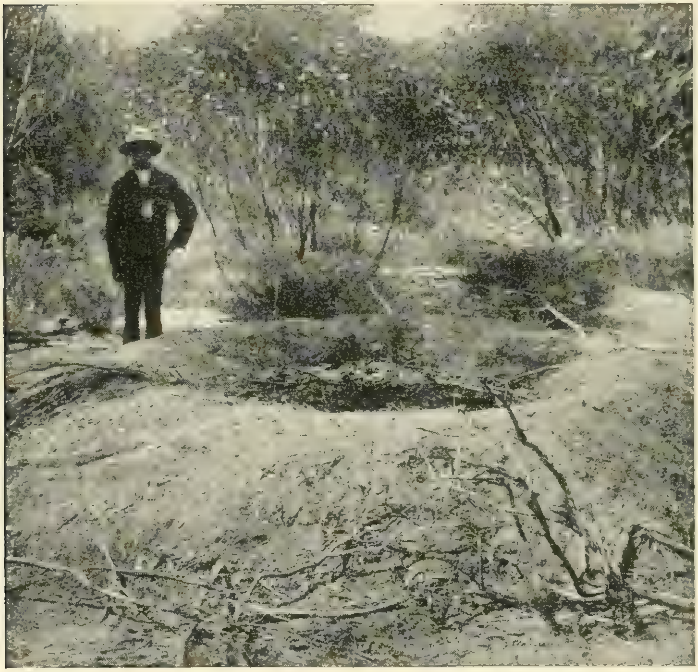
III.—*On the Habits of the Mound-building Birds of Australia.*

By D. Le Souëf, C.M.Z.S., Melbourne.

Mound-building birds are always a subject of interest; they are widely dispersed over the continent of Australia, and are likely to hold their own for a long time to come, for as a rule they inhabit country which can with difficulty be turned to any practical account, such as the dry sands of the South and the densely-timbered coastal ranges of the North. All the Australian species make their mounds of different material and in a different way, and I will now give a few details of the habits of each of them, based on information obtained from practical observation.

1. The Mallee-Fowl (*Lipoa ocellata*).

This bird has an extensive range in the southern half of Australia, being found in the north-western portion of Victoria, south-western portion of New South Wales, Southern South Australia, and Western Australia. It is, practically speaking, found wherever the mallee (a dwarf eucalyptus) grows, and hence the name of the bird, as it is



Half-finished Mound of the Mallee-Fowl.

always associated with the mallee or similar scrub. The country where this tree grows is mostly sandy and has a small rainfall, often being intersected with sandy ridges, popularly called pine-ridges, from the fact that the Murray pine generally grows on them.

The male and female birds differ very little in markings, and their mottled black-and-grey colour harmonizes wonderfully with their surroundings. As they are shy and solitary, they are rarely seen, but specimens are sometimes obtained by patient watching near their nesting-mound. They occasionally utter a low soft note, and their gait when undisturbed is a slow walk, although they can run fast if necessary. Their food consists of insects, berries, and the buds of a small shrub. They go to roost in trees when it is almost dark.

The nesting-mound of these birds is generally situated close to some pine-trees or with thick scrub near or round it, and rarely without cover being near. When the scrub has been cut down round their old nesting-place they leave it and form another, but they prefer to make up their old mounds if possible, and the same places are often used year after year. When the birds have selected a site, they scrape out a slight hollow in the ground, from 6 to 8 inches deep in the centre and about 2 feet wide. Next they scrape up leaves, bits of bark, twigs, and other vegetation that may be lying about, and put enough on, not only to fill the depression, but to make a small mound of it, about 8 inches or more above the level of the surrounding ground. They then form a hollow in the centre of the vegetation about one foot wide and 6 inches or more deep, this being the egg-chamber; after which they scrape sand all round the nest and leave it until rain comes and well wets the vegetation. The sand is then spread well over the mound to a depth of about 6 inches, and after a few days, when the vegetation has heated, the mound is ready for eggs. The nest is generally made in July or August and the first eggs are laid towards the end of September, but the absence of the necessary rain sometimes makes it later. Both birds assist in making the mound. The sand is scraped together with both the feet and the wings, the latter being used especially when getting the sand well up on the mound, which, when finished, often measures at the base 12 feet in diameter and in the centre from 2 to 4 feet high, and as the sand is generally dry and runs freely, it is no easy matter for the birds to heap it up as they do. The various measurements given are about the average, as they differ more or less in every mound. The nest being ready for eggs, the hen bird scrapes out most of the sand from the egg-cavity, and, leaving about 2 inches of it at the bottom, she then lays her egg, and holding it upright with one foot, with the small end downwards, she scrapes the sand round it with the other foot until it can stand alone. The bird has to lean well back to enable her to use both her feet. She then covers the whole over with sand. The egg-cavity has to be scraped out and refilled every time an egg is laid, giving much work to the parent birds. The eggs are generally placed at the outer edge of the chamber and one often in the centre. The first eggs are covered up with about two inches of sand over them, and a second tier commenced, each egg being laid opposite the interspaces of the lower lot. There are generally three tiers, with from three to five eggs in each, and a full clutch is about 14. I have always found the temperature of the egg-cavity to be from 95° to 96°. The eggs are laid at daybreak on every third day, and incubation takes a little over five weeks. As incubation starts as soon as the egg is laid, the young ones are ready to hatch at different times. The eggs are usually of a delicate pink-colour, especially when first laid, but the pink colouring-matter easily comes off, especially after the egg has been taken out of the nest for some little time, and leaves the white under-surface exposed ; occasionally I have found all the eggs in one mound pure white. The shell is very fragile, and one reason why the eggs are placed on end is evidently to sustain the weight of sand with which they are covered ; the sand round the eggs is generally slightly damp. Sometimes, when the parent bird is opening up the mound, she scratches a hole in the top of one of the eggs, the sand then gets in, and, mixing with the contents, forms, when dry, a compact sandy mass, completely filling the shell; on one occasion I found five such eggs in one mound.

There has been much discussion as to whether the young birds can make their own way out of the soil unaided by their parents. In order to settle it I covered in with wire netting a nest with several eggs in it, so that the parents could not open it up, and found all the chickens, when they came to maturity, dead in their shells. Then again, on taking the eggs from a nest, you often find chickens in their eggs which are ready to hatch, especially in the lower tier; so much so that, when opening the egg, you have to hold the young bird firmly to prevent it from escaping and running away. Then on other occasions you find chickens near the surface under the sand, apparently working their way out unaided. The old birds open up the nest to a certain extent daily at daybreak, and it is probable that any chickens that may be ready to come out, especially in the lower tiers, do so then. Moving the sand also prevents it from becoming set. But the chickens that hatch from the eggs of the top tier, the sand there not being set so tightly and being drier and running more freely, are able to force their own way out, and, judging from the experiments I have made, I should say this was usually the case. On opening up the nest that had been wired in, I found that the sand had set rather tight, especially where the eggs were, and this I should say fully accounted for the young birds being unable to come out.

When the mound is opened up during the day and eggs abstracted, the parent birds repair the mound shortly after the intruder has gone away, showing that either one or other of the birds generally remains in the neighbourhood.

When the young are hatched they are well able to take care of themselves, being strong and well developed, and their wing-feathers sufficiently formed to enable them to fly a short distance; but they trust almost entirely to their running and hiding to escape danger, and to catch a newly-hatched young one in the scrub is no easy matter. The parent birds seem to take very little notice of their young, which lead an independent existence from their birth. Most of the Mallees in captivity have been taken out of the egg, and they thrive well and are easily reared and kept, but do not, so far as I know, attempt to make a mound in confinement. Water is apparently not necessary for them, and in the dry country in which they live they must often have to go for months without any, but the same remark also applies to many other birds.

2. LATHAM'S BRUSH-TURKEY (*Catheturus lathami*).

The Brush-Turkey is found on the north-east coast of Australia, from the Clarence-River district in New South Wales to Cape York in Queensland, and extends for a considerable distance inland. It is invariably met with in thick scrubby country, and prefers the higher lands, especially in the coastal districts of North Queensland, where you find the Brush-Turkeys inhabiting the hills and the Scrub-Fowl (*Megapodius duperreyi*) the low-lying country.

These birds are not often seen, being solitary and shy; run fast, but fly heavily, and with the aid of a dog can be easily made to take refuge on the lower limb of a tree, whence they go upwards from branch to branch until high enough to fly off above and clear of the scrub. The sexes are of the same colour, but during the breeding-season the male has a reddish-yellow wattle hanging from his neck, which he can apparently inflate at will; the female has no wattle. They are generally silent, but during the nesting-season the male, when at the mound, often makes a hoarse kind of call, and also when roosting in the evening. Their food consists of insects and berries, and at night they roost as high on the scrub-trees as they can get.

They make their mounds in the dense scrub anywhere, either on the level surface or on the side of a hill; when at the latter place they scrape the material for the mound from the upper side only. The same site is used year after year, but the mound is entirely remade, and is composed largely of leaves and twigs, with comparatively little soil, consequently very little of the mound is left when the next nesting-season comes round. The birds scrape together the surface-leaves and other stuff which form the mound without previously preparing the ground, and the male bird does nearly all the work, Not only so, but when the mound is finished he is always near at hand, walking over and adding to it, and seems to constitute himself sole guardian. The mounds vary in size, but average about 3 feet 6 inches high in the centre and 10 feet in diameter at the base. They are generally made up early in September, and the birds commence laying in October or early in November. The leaves are scraped together during damp weather to cause them to heat, and the large powerful claws of the birds enable them to do this very quickly.

When the mound is sufficiently heated for eggs, the hen bird scrapes a hole in it on one side near the top, from a foot to 18 inches deep, and, laying her egg in it, places it on end with the small end down and then covers it up; but while she is on the mound the male bird vigorously beats her, apparently trying to drive her off, and on one occasion, in confinement, to my knowledge, killing her.

The temperature of the mound where the eggs are is about 95° or 96°; the egg is laid early in the morning and every third day, and a clutch consists of from 12 to 16 eggs. These are pure white, granulated, and rather fragile, and are generally placed irregularly round the top of the mound. During dry weather the birds add much vegetation to their structure, evidently to keep the material round the eggs from becoming too dry, but in wet weather they scrape it off again. The time of incubation is about six weeks. The young, when hatched, make their own way out, and do not need any assistance from their parents, but are able to fly and take care of themselves, leading a more or less solitary existence.

The male bird soon repairs any damage that may have been done to the mound, and a single pair of birds use one mound, but occasionally another hen will lay her eggs in it. The young when hatched are of a dark brown colour and difficult to detect in the scrub; they grow quickly, and in nine months are barely distinguishable from their parents.

They are easily kept in confinement, but, being very pugnacious, the males have to be separated when the nesting-season comes on. Two years ago, in the Melbourne Zoological Gardens, there were several of these birds in one enclosure. They made a mound, but had not enough vegetation in it to cause sufficient heat to hatch the 56 eggs that were laid, consequently these were all addled. Last season only a pair were left in, and I had the mound made up for them, and when one bird had finished laying I had another put in; she also laid in the mound, one bird laying 12 eggs and the other 13. Seventeen young were hatched and made their own way out; 16 of these were reared to maturity, and one died immediately on escaping from the mound. The other eight eggs were addled.

3. Barnard's Brush-Turkey (*Catheturus purpureicollis**).

This bird differs considerably in the coloration of the neck of the male bird from the *Catheturus lathami*, but its habits are practically the same. It is found in Cape York only, and has not the extensive range of its congener.

Mr. H. G. Barnard states that during the time of his visit to Cape York in October, November, December, and January, the season having been exceptionally dry and very little rain having fallen, hardly any of the birds laid, and the many mounds he tried were all empty. He found only one egg, and that in January, showing how much weather affects birds nesting.

4. Duperrey's Scrub-Fowl (*Megapodius duperreyi*).

These birds are found on the north-east coast of Queensland, always inhabiting the densest scrub, and never very far from the coast, and in the low-lying country on each side of many of the tidal rivers for a short distance inland. They are also found on many of the small scrub-covered islands of the coast, and although the birds are very poor fliers, they must have winged their way out to the islands somehow, as in many cases they are situated a good many miles from the mainland. It is possible they may have been blown out during a cyclone. The want of water on many of these islands does not seem to make any difference to them.

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* *Talegallus purpureicollis*, Le Souëf, Ibis, 1898, p. 51.

The male and female are very similar in appearance, being of a dark brown colour, the male being the darker of the two. They are difficult to detect in the scrub, especially when they remain quiet, which they often do on being first disturbed. Their habits are shy and solitary, and they are rarely seen, as, on being alarmed, they can run very quickly, keeping in the thickest cover, or else they fly into a low branch of a tree, and on perceiving any movement on the part of the cause of their disturbance they fly heavily away. They use their wings much more readily than the Brush-Turkey, and fly more freely through the scrub.

They are generally very silent during the day, but when they are going to roost near the tops of the high trees they often utter a loud double call, and frequently repeat it all night at intervals of half an hour or so. When camped in the scrub I have often heard them. Their food consists of snails, insects, berries, &c.

The Scrub-hens generally make their mounds in thick scrub, and apparently without any particular choice of locality; they are often placed just above high-water mark on the coast, and of course are then mostly composed of sand mixed with stones, roots, sticks, and leaves, while further inland earth takes the place of sand. But, unlike the Mallee-Fowl or Brush-Turkey, they form their mounds mostly of soil, with just sufficient vegetation mixed with it to cause it to heat. Again, they do not scrape out their mounds every season, but add to them, so that, as they are largely composed of soil, in the course of a few years they become of considerable size, and shrubs and trees often grow on them, and in course of time fill them with a network of roots. By that time, however, the birds generally desert them, not so much on account of the roots, but because the vegetation has become decomposed and no longer generates sufficient heat. When a pair of birds start a nesting-mound it is often very small the first year, about 2 feet high and 5 feet in diameter at the base, and you find mounds from that size up to 14 feet high and 35 feet in diameter at the base.

The birds generally make the top portion of the mound up and add to it in July and August, apparently to let sufficient moisture penetrate before they commence laying towards the end of September or early in October, in a wet season earlier, in a dry season later. The surface is scraped for a considerable distance round the mound, holes often being made from which they take the soil.

The temperature of the part of the mound where the eggs are placed is generally 95°, occasionally a little over, and a clutch is nine eggs, that being the largest number I have known to be taken out of one nest. So far as I can judge, only one pair of birds use the same mound, and the male is generally near at hand to repair any damage that may have been done. When the hen bird is ready to lay she scrapes a hole near the top of the mound to the depth of from 6 inches to 5 feet, and the egg having been laid in the hole she places it on end, with the small end downward, and covers it up to the level of the rest of the mound. Occasionally she makes an excavation straight in from the side, but not often. The various holes are not placed in any particular order, nor are they all of one depth. The egg is laid at daybreak, and three days elapse between the laying of each egg and the next. The egg being so large compared with the size of the bird will quite account for the time between the layings. The white shell of the egg is covered with a pink substance, which easily flakes off when the egg is dry. The eggs are about the same size and colour as those of the Mallee-Fowl, so much so that the eggs of one bird can easily be mistaken for those of the other. Incubation takes about six weeks, and the young when hatched make their own way out, as the parent birds, by frequently scratching, prevent the soil from becoming caked and hard. Only one egg is laid in each excavation, and the holes are about a foot in diameter; sometimes they go down straight and sometimes at an angle. In a moist neighbourhood the eggs are not so far from the surface as they are in the drier sandy soil.

The young when hatched are well feathered and can fly, and at once commence an independent existence, as they do not stay with their parents. Scrub-fowls are difficult to keep in confinement, being very restless, and generally end by accidentally killing themselves. Consequently adult birds of this species are rarely seen in captivity.

IV.—*On the Comparative Ages to which Birds live.*

By J. H. Gurney, F.Z.S.

How many things there are in ornithology, in spite of our boasted proficiency at the present day, of which we are really profoundly ignorant! And one of these is the age of birds. Who can say what guides birds on migration, in spite of all which has been written on the subject—whether any of them have the power of smelling—what their powers of vision are, or even what becomes of them when they are dead?

There is still much difference of opinion as to whether many species moult the major part of their plumage or recolour, and the best ornithologists are divided as to the height at which birds migrate, the speed at which they go, and the age to which they can, under the most favourable conditions, live, which is the subject of the present paper. No one, up to now, has been at the pains to collect and compare the facts about age scattered in many books, but I hope to make at least a step in that direction. Birds are not to be compared to human beings. They are in truth handicapped in the race for life, for it is ordained that all the feathered tribes should be very much exposed to death from a great many accidental causes. We may so call death from insufficiency of food (oftenest arising from the extremes of heat and frost), from ravenous Hawks and other predaceous animals, and from the hand of man with his gun and snare. Almost every species of bird migrates, and they have to reckon on storms during migration, which doubtless dash them into the sea in hundreds every year.

Because of these perils, it may well be believed that not one bird in fifty reaches its full possible duration of life, perhaps not one in two hundred. However, the subject for discussion in this article is not the average age to which birds commonly live, but rather the full extent of age to which they can live, all things being in their favour; but both divisions of the subject are interesting, and I am surprised that no recent writer has inquired into them.

The great Lord Bacon (b. 1561), in his treatise on 'Length and Shortness of Life in Living Creatures,' had a great deal to say about the age of birds, and concluded that more kinds were found to be long-lived than of beasts, setting forth various reasons why this was probably so. He particularly lays emphasis on the mixed motion of birds in their flying, as being a kind of exercise conducive to longevity, which is denied to beasts, and he assigns to several sorts what was believed to be the maximum of their longevity in his day, and really we do not know much more about it now than he did then.

Willughby and Ray (1676) devote a chapter to "The Age of Birds," which shows that attention had been turned to the subject by older authors than themselves, like Aldrovandus. Something also may be found in Philos. of N. H. ii. p. 416, and in 'Domestic Habits of Birds,' 1833, from the pen, I believe, of Prof. J. Rennie; but the literature of the subject in modern times is very scanty, though a certain number of incidental notices are scattered about such journals as 'The Field' newspaper and 'The Zoologist.'

In Thompson's 'Birds of Ireland' (1851) there is a useful article, and in 'The Naturalist' for 1897, p. 129, there is a paper by Mr. Oxley Grabham on "Owls and their Longevity." Allusion should also be made to Mr. W. B. Tegetmeier's article on "Length of Life in Zoological Collections" ('The Field,' June 5th, 1869), and to some notes in the late Lord Lilford's two articles on "Raptorial Birds in the Lilford Aviaries," Norwich N. Trans. iv. p. 564, v. p. 128.

Again, in Knapp's 'Journal of a Naturalist,' the duration of animal life is discussed at p. 180. Remarking on the longevity of the Eagle, Raven, and Parrot in a captive condition, the author opines that "in a really wild state they would expire before the period which they attain when under our attention and care;" and again he says "it is probable that few animals in a perfectly wild state live to a natural extinction of life."

It is easier to subscribe to the second opinion here expressed than to the first. Cage-birds are too often neglected to have an easy time of it, but perhaps a semi-domesticated bird like *Cygnus olor* has the best chance of longevity of any.

It is more than probable that some families, and it may be even allied genera, attain a greater age than others, and to elicit information on this head has been one object of inquiry. The tenacity of life in *Sarcorhamphus gryphus* and *Gyps fulvus* is great, and all Eagles and carrion-eating birds are reputed to exist a long time without food; a neglected *Aquila chrysaëtus,* for example, lived 21 days.

Some of the sea-birds can fast a very long time, such as *Puffinus anglorum.* A *Somateria mollissima* of Mr. St. Quintin's had no food for 28 days, and a *Diomedea nigripes* of Mr. Robert Swinhoe's none for 35. The young of *Diomedea* has been thought to live on its own fat, and it is said that *Aptenodytes demersa* can live two months without a morsel of food (Ibis, 1866, p. 324). These facts are suggestive, for surely all such famine-proof birds must in the race for life have an advantage over the weaker *Passeres* and *Picariæ.* Grass-Finches, Manikins, Waxbills, Cut-throats, &c., whatever may be the case in Africa, can last a very short time without seed in confinement here in England. The *Columbæ* and the *Tetraonidæ* and *Phasianidæ* also contain genera which seem to want food often, even in a wild state.

The following is a selection of genera for comparison, indicative of their normal length of life, from the list of ages to be presently given :—

	Years.
Cockatoo (*Cacatua*)	81
Goose (*Anser*)	80
Swan (*Cygnus*)	70
Raven (*Corvus*)	69
Owl (*Bubo*)	68
Macaw (*Ara*)	64
Heron (*Ardea*)	60
Bateleur Eagle (*Helotarsus*)	55
Vasa Parrot (*Coracopsis*)	54
Condor (*Sarcorhamphus*)	52
Albatross (*Diomedea*)	46
Gull (*Larus*)	44
Pelican (*Pelecanus*)	41
Dove (*Turtur*)	40
Oyster-catcher (*Hæmatopus*)	30
Emu (*Dromæus*)	28

Dr. Brehm thought that the smaller birds had a shorter life than the larger ones, and some other naturalists have taken up the same idea, which is not improbable; but it is a theory which is mere supposition, and one which is almost incapable of proof, and I only mention it as having Brehm's authority. I may here quote some remarks from a correspondent who has felt the same interest in this difficult matter that I have. "One of the puzzles," writes Mr. R. M. Barrington *in litt.*, "of the ornithological census is the uniformity with which birds maintain their numbers. The Guillemot with one egg does not diminish, and the Wren and Teal do not seem to increase, although laying many more eggs. The mortality seems in direct ratio to the birthrate . . . . . It would seem that, broadly speaking, a bird which lays one egg must live longer than a bird which lays ten, if they both breed once annually."

Whether "age" is or is not the solution of this puzzle is a difficult question to answer,—there is no species of Duck in my list older than 29, and as to Wrens and Guillemots we know nothing. The Guillemot has probably few enemies, and the Wren and Long-tailed Titmouse cannot have much to contend with. It looks as if Mr. Barrington's suggestion was right, yet it must be remembered that there are several sorts of birds that lay a good many eggs, such as the *Anseres* and *Cygni*, which are known to be long-lived.

Weismann and Oken have argued that in St. Kilda [Boreray] so many young Gannets (*Sula bassana*) are annually taken for food that, if this were not a long-lived species, diminution in the stock would be observable; and the same applies to the Fulmar (*Fulmarus glacialis*). This is in some respects rather a false style of reasoning, because if there were not an annual slaughter there would probably be an annual throwing off of the surplus; but as the argument has been put forward it must not be passed over. If it were admitted, it would apply in a less degree to *Perdix cinerea* and *Lagopus scoticus*, which are shot by tens of thousands, and also to several other birds.

Search as we will, we hardly ever find a bird which has unmistakably died a natural death, and this has been put forward by some authors as a great argument for longevity. For the same reason great age has been assigned to the elephant, and such elephant-hunters as Sir Samuel Baker and Col. Pollock declare that they have never come across the carcass of an elephant. Allowing for the quick consumption of the soft parts by predaceous quadrupeds and burying beetles, one would at least expect to find the larger birds' skeletons occasionally, but such is very seldom the case.

The period of a bird's incubation seems to have something to do with the length of its life, albeit the *Psittaci* are the principal exception which invalidate this theory. Referring to Mr. William Evans's "Table of Periods of Incubation" (Ibis, 1891, p. 57, 1892, p. 55), it will be seen that Cockatoos take 21 days, Cockateels 20, Parrakeets 18, and Macaws from 20 to 25, to hatch. Three weeks is very little for such a long-lived family as this is commonly supposed to be, compared with the incubation of many birds which, according to our present knowledge, do not live so long as the *Psittaci*; but the subject cannot be worked out without more facts which we have not got at present. Among long-lived birds which take a long time in incubation, the principal are :—

Bubo maximus,	about 35 days	(*Gurney*).
Aquila,	30–35 days	(*Evans*).
Sarcorhamphus,	54 days	(*Broderip*).
Anser domesticus,	30 days	(*Evans*).
Cygnus olor,	36 days	(*Stevenson*).

So far as they go these support the theory, but unfortunately there are also many exceptions to invalidate it. To take only one: a domesticated Wild Duck requires 28 days to hatch her eggs, and the domesticated Muscovy Duck 37 days; but one lives as long as the other so far as we know, though poultry-keepers do not commonly give any Ducks the chance of very great longevity*.

It is abundantly proved that so long as health remains to them the majority of birds can go on breeding, as Mr. Meade-Waldo's Eagle-Owls, to be mentioned presently, testify. It is so with the domestic Goose of our farmyards. Mr. L. Wright says:—"The Goose lives, lays, and produces strong and healthy progeny to a very advanced age, many cases being recorded of birds being in full breeding to at least forty years old." ('The Book of Poultry,' p. 560). What is true of *Anser domesticus* and *Bubo maximus* is also true of many other birds. Their vocal powers are likewise known to remain strong and vigorous for a very long period: a Blackbird of 20 continued to sing well ('The Belfast Commercial Chronicle,' Dec. 25th, 1839) and a Skylark nearly as long ('Zoologist,' 1865, p. 9604), while a *Gymnorhina tibicen* of 26 was noisy to the last. If birds can sing as long as that in a cage, there is probably no limit in a wild state. Johann Naumann instances a Cuckoo which called, season after season, in the same peculiar key for 25 years, and was considered to be the same bird, and other cases in point might be cited.

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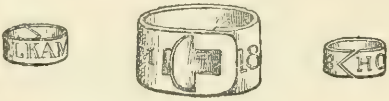
* It is generally held by those best qualified to judge (though not by Prof. Newton) that there is also some correspondence between age and gestation in mammals, at any rate in the larger Mammalia. The subject has lately been revived and ventilated in 'The Field' newspaper (see February 5th and 12th, 1898), and some facts and some theories put forward about elephants by Col. Pollock and Mr. Cameron. The idea is as old as Pliny, commenting on whom Willughby and Ray remark: "If Animals of different kinds be compared together, as for example Birds with Beasts, those will sometimes be found to be most vivacious [long-lived] which are borne the least while in the womb."

Bleached or faded birds, and birds with worn or abraded plumage, are often held on that account to be very old, but the truth is the colouring of a bird in perfect health and the texture of its feathers are exactly the same at 50 as at five,—*vide* Mr. Meade-Waldo's veteran pair of *Bubo maximus.* Neither are overgrown beaks and misshaped claws a sign of age, arising in all cases from unnatural conditions of some kind. An *Alauda arvensis* of 20 with a hind claw exceeding 2½ inches did not owe that deformity, as its owner erroneously supposes, to its age, but to captivity and unnatural perches.

Sometimes birds, after being many years in captivity, have been known to develop white feathers, e. g. *Turdus merula* (Thompson), *Monticola cyanus* (Macpherson), *Fringilla cœlebs* (Butler). But this incipient albinism is not directly due to age, but to the artificial conditions under which all birds are placed in captivity. In the same way, when the colour of the iris grows pale, as in nocturnal and diurnal birds of prey, it is much more likely to be from sun-exposure than from age, though it is possibly longevity which sometimes produces blindness from cataract in *Bubo maximus* and some *Psittaci.*

Now I should like to say a word about marking birds, which some experimenters have thought could be made an available method if placed in careful hands, and it certainly seems that it might be so. Nevertheless, artificial marking to test age is a procedure beset with difficulties, for the chances must ever be 50 to 1 against a ringed wild bird turning up in the right quarter to be identified after a lapse of years. The easiest species to experiment with would probably be *Cygnus olor*, living as it does in a semi-domesticated state, and *C. olor* has had, ever since the swanherds of the time of Bacon, the reputation of antiquity. *Ardea cinerea* has on various occasions been ringed by the Loo Hawking Club and other falconers, as will appear further on, and there is one very curious anecdote of a Dutch Swan which bore its ring 102 years.

The lightest aluminium rings are recommended by some pigeon-fanciers, as they do not rust, to be fixed close round the leg (tarsus), but they are not so pliable as white metal rings, which can be made of all sizes, open easily, and are said not to corrode. Either sort can be obtained from Mr. A. C. Hughes, Fulwell Station, Twickenham, the inventor of interlocking rings, such as are shown in the accompanying figures. If used for young birds, the day of putting them on should be deferred as long as possible, for in most cases the tarsus continues to grow until the bird is full-grown, and cruelty may arise from too tight a ligature.



Interlocking rings for marking birds.

Since 1891 about nine young Woodcocks have been annually ringed at Alnwick Castle in Northumberland, as I learn from Mr. E. G. Wheeler, who adds that the practice of ringing them will be continued by the Duke's orders. If they are not all shot, we may anticipate that naturalists will get some statistics from some of these "Longbills," but some have been killed already in the Alnwick preserves, besides one in Kent and another in Ireland. There is at present no case of a Woodcock living more than 6½ years.

In 1896 nineteen *Uria bruennichi* and twenty-two *Rissa tridactyla*, were liberated in Franz Josef Land marked with a "J" (Ibis, 1898, pp. 268, 271). In 1898 Col. Feilden had some birds ringed at Holkham in Norfolk with rings stamped "Holkam 1898"; and Miss Hamond ringed 44 young *Sterna fluviatilis* at the same place with rings inscribed "1898," and one of them has turned up already. In 1887 a marked Albatross was released off Cape Horn.

In the case of the *Alcidæ* daubs of paint have been tried, but artificial marks are of no value as an indication of age, for the feathers of birds are continually dropping out and wearing away. For this reason accidental varieties, *e.g.* the pied Ravens of Faeroe, cannot be trusted for many years. A white-headed *Turdus merula* seen at Fethard for 15 years ('Birds of Ireland,' i. p. 148) and another, seen at Barnard Castle for 7 (Zool. 1866, p. 347), may or may not have been the identical individuals which first revealed themselves, as their recorders believed them to be.

The following, by Mr. Joseph Whitaker, is very much to the point, and may be adduced as bearing on this fallacy:— "When once a variety has occurred there is always the chance of its coming out again. For instance, in a rookery in Leicestershire a few years back a white Rook (*Corvus frugilegus*) was hatched, and nearly every year since either white or pied ones have occurred." (Norwich N. Tr. iv. p. 63.) These latter were, presumably, the descendants of the albino or of the albino's parents and it is evident that the first white Rook detected may very soon have been dead.

Still less is the fact that a *Gypaëtus barbatus* in Switzerland or a *Corvus corax* frequented one secure precipice for a quarter of a century, without any others of the same species being seen, a proof that it was always the same individual. Neither can we admit as more than presumptive evidence the return year after year of such a bird as the *Muscicapa grisola* to the same nesting-place. To show how unsafe this conclusion would be, Hawfinches (*Coccothraustes vulgaris*) nested almost every year on a certain bough on an apple-tree in Norfolk, though both the old birds were frequently shot (F. Norgate, Norw. Nat. Tr. ii. p. 201), and therefore they could not have been the same.

In the same category is the evidence of the keeper of the Bass Rock who "recognized from particular and well-known marks certain" Gannets for upwards of forty years. (Selby, Brit. Orn. ii. p. 457.)

There are eight Orders of Birds about which I should like to say something before beginning my List.

PASSERES.

In the order *Passeres*, 24 years seems to be about the maximum in confinement, and only five in the list reach that, but six others get as far as 20. Several have lived long enough to refute Brehm's opinion that the smaller singing-birds can scarcely live more than ten years. Mr. Meade-Waldo's pair of *Erythrospiza githaginea* even produced and reared 22 young ones in one season when they were twelve years old, an instance of what skill and care can do with cage-birds in a country far colder than their own. As to how long the *Passeres* can live in a wild state we are quite in the dark, and must remain so apparently, none of those in my list being wild ones.

Dr. A. G. Butler has succeeded in keeping the following Weaver-birds for about nine years:—*Foudia madagascariensis, Nesacanthis eminentissima, Quelea russi, Q. quelea, Pyromelana franciscana,* and *P. afra*, and they were all two or three years old when he first had them. Many other small cage-birds have also been kept for about the same period by Dr. Butler and other bird-fanciers. The Raven's attribute of long life dates to early times and has given rise to some amusing stories. On the Faeroe Islands is an old saying:—"A human being lives as long as three horses, a Crow as long as three human beings, but a Raven as long as seven Crows." Willughby says their reported age exceeds all belief, "yet," he adds, "doth it evince that these birds are very long-lived"—having, it may be, in his mind the Greek poet Hesiod, who averred that a Raven would live nine times as long as a man. But neither Francis Willughby nor Bacon nor Kjærbölling, who says "Ravens in confinement have lived over 100 years," gives verified cases. Montbeillard is one who says it seems well ascertained that Ravens sometimes live a century or more, adding that in many cities of France they have been known to attain to that age: probably an assumption from the circumstance of a pair of them, presumably the same individuals, continuing to haunt one rock or one eyric for an indefinite number of years, which is absolutely no proof.

Psittaci.

Le Vaillant's oft-quoted anecdote of a Grey Parrot, *Psittacus erithacus,* which began to lose its memory at 60, to moult irregularly at 65, and to become blind at 90, and died at 93 (Hist. Nat. des Perroquets) may be quite true, but is hardly sufficiently established to be in an authenticated list. These familiar pets have repeatedly lived to be five-and-twenty and sometimes thirty, though the stock now commonly imported are so unhealthy that they die in two years. James Jennings refers to one of seventy-seven: he does not say it was *Psittacus erithacus* ('Ornithologia,' p. 396), but probably such was the case.

In 'The Field' of April 10th and 24th, 1869, Mr. J. Jones and "W. H. M." wrote of a Cockatoo of 70, and still alive, which announcement immediately evoked a Scotch Parrot of 72 (*l. c.* May 8th), but in neither case is the name of the species given—probably *Cacatua galerita* and *Psittacus erithacus* are intended.

The *Cacatuidæ* are indubitably long-lived, especially the familiar Sulphur-crested Cockatoo, which, chained to its stand year after year, never seems to get older, and I have two other credible records of this bird at 81 and 50. But if the members of a certain family at Leckhampton, in Gloucestershire, are to be trusted, a Cockatoo once lived 120 years ('Land and Water,' 1870). The old sexton of Leckhampton, whose veracity was supposed to be unimpeachable, told Mr. E. L. Layard he had himself known it "nigh 80 year," and Mr. Layard was not the man to accept such a story without enquiry.

Mr. Abrahams, the well-known dealer, communicated to Dr. A. G. Butler particulars of a Surinam Amazon credibly believed by him to be 102 years old. An Amazon Parrot well known to Dr. W. T. Greene was more than half this age. The Black Vasa (*Coracopsis*) of Madagascar has in three or four instances lived to a good old maturity, one in the Zoological Gardens, vouched for by Mr. Sclater *, having been there 54 years. In spite of all these instances there is no real proof that the *Psittaci* live longer than other birds; the only thing they really do prove is that Parrots are easier to keep in confinement.

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* P. Z. S. 1884, p. 562.

STRIGES.

Certainly Eagle-Owls (*Bubo maximus*) are Methuselahs, as is befitting birds of such a wise and patriarchal countenance. Their longevity has been abundantly demonstrated by many kept by my late father, Lord Lilford, and Mr. Fountaine, but above all by Mr. Meade-Waldo's marvellous old pair, now 68 and 53 years old. What is very remarkable and an extraordinary proof of vigour is that Mr. Meade-Waldo's Owls have bred regularly since 1864, namely 32 years, having in that time reared no less than 93 young ones. They are still in the best of health, showing what care and personal attention can do. It is, I imagine, Mr. Meade-Waldo's old female which has been by mistake alluded to as belonging to the late Lord Lilford by the authors of 'British Birds,' iii. p. 86. But old as Mr. Meade-Waldo's Owls are, Sussex can take the prize, according to the 'West Sussex Gazette,' with one of the hoary denizens of the keep of Arundel Castle, called "Lord Thurlow." This was the name of an Eagle-Owl, the subject of some amusing stories, which expired in 1859 at the age of 100, leaving seven birds in captivity in the "keep," one of which was 63. From inquiries made at the Castle I believe them to have been the European Eagle-Owl, *Bubo maximus*, but on this head see Borrer's 'Birds of Sussex,' p. xvii. With what degree of precision their ages were recorded it is difficult to say; but the present Duke confirmed the fact of their being very old, and concerning Mr. Meade-Waldo's pair there need be no question.

ACCIPITRES.

Besides the 27 cases to be presently enumerated, several of which it will be seen from the list are sufficiently remarkable, there are stories with much credibility about them of still older *Accipitres*, and to these I would briefly direct attention. To begin with, Brehm, in his 'Life of Animals' (1878), gives us an *Aquila chrysaëtus* nearly 80, which had died in captivity at Schoenbrun. At this place also a white-headed Vulture died in 1824, at the age of 118 (Knauer, 'Der Naturhistoriker').

According to Maitland's 'History of London' (1756), there was in 1754, in the Tower of London menagerie, "a Golden Eagle which has been kept there upwards of ninety years, and several other Eagles."

The 'Berlin Post' (as quoted by the 'Times' of Sept. 8, 1883, reprinted Zool. vii. p. 422) relates a story of an Imperial Eagle (qu. *A. imperialis* or *A. adalberti*?) taken that year in Brandenburg ringed with a plate on which was engraved "H. Ks. O. K.," and underneath "Eperjes," and on the other side "10. 9. 1827," which makes the bird 56 years old. Eperjes is in Upper Hungary, and in the opinion of Dr. J. von Madarász the first two letters stand for the owner's name.

Long ago there was at Vienna a reputed Eagle of 104, which has done duty in many books without reference to the original passage recording it. It will be found in John G. Keysler's 'Travels through Germany' (i. p. 70), where the Eagle is affirmed to have lived in confinement from 1615 to 1719. Keysler's work was first published in German, and the history of this Eagle seems to have been told him at Munich in 1829.

According to an extract from the 'Naturalien Cabinet' of Oct. 5, 1897, kindly sent me by Dr. P. Leverkühn, a Royal or Golden Eagle had been recently shot at Eszeg, in Slavonia, with a steel ring round its neck engraved with the arms and name of a Slavonian family, and above them the date 1646. The story was copied into some of the English newspapers, but Mr. Tschusi, the editor, has informed Dr. Leverkühn that he discredits it, and it seems incredible.

In the 'Gentleman's Magazine' for 1793, p. 181, it is related how a Hawk, probably *Falco peregrinus*, had been found at the Cape of Good Hope and brought from thence by one of the India ships, having on its neck a gold collar thus engraved:—"This goodlie Hawk doth belong to his Most Excellent Majestie James, Kinge of England. A.D. 1610." The anecdote is barely credible, for a Hawk with a ring round its neck—a primitive method (Norw. N. Tr. iii. p. 88)—is not very likely to have lived 180 years or to have flown 6500 miles. Another Falcon is said to have attained 162 (Knauer, 'Der Naturhistoriker').

PELECANIDÆ.

Willughby, on the authority of Schaad, tells his readers of a Pelican of 40 in the Duke of Bavaria's court, while Aldrovandus tells of another at Mechlin, in Brabant, known to be 50, and believed to be 80 ('Ornithologia,' xix. p. 22). Turner also tells of one of 50, perhaps the same (Hist. Avium). Pelicans have been known to live a long time in various zoological gardens, even where they have had no sheet of water to sail about on. We learn, for instance, that "of a great number of Pelicans kept in the menagerie at Versailles none died in the space of 12 years" (Mém. de l'Acad. des Sci.), a record which *Pelecanus onocrotalus*, *P. conspicillatus*, and *P. crispus*, the property of the Zoological Society, can easily beat, under the guardianship of their watchful keeper, T. Church.

At Rotterdam there is a Pelican of 41 still living.

But enough has been said to show the considerable duration of life of the *Pelecanidæ* under the most favoured circumstances.

ARDEIDÆ.

Herons have been often ringed by hawking clubs and afterwards retaken, affording well-attested cases of longevity in a wild state and of migratory wanderings as well (*cf.* 'Birds of Norfolk,' ii. p. 139; 'Birds of Suffolk,' p. 158). It will be sufficient to give the particulars of the two oldest only. In the 'Annual Register' for 1767, under date July 7th, readers are informed that "As the Prince Stadtholder [of Holland] was taking the diversion of hawking, he caught a Heron with a brass inscription round its legs, setting forth that it had been taken and released by the Elector of Cologne in the year 1737," *i. e.* a Heron of 30 years of age. But nine years before that, viz., in the spring of 1728, a Heron was taken in Bavaria which had been ringed 60 years before by Duke Ferdinand the Elector, according to Keysler's 'Travels through Germany,' i. p. 70. As Keysler says he was at Starrenberg Palace the year following, it was no doubt there that he got the particulars first-hand. The Crane has lived to be 40, and my father has recorded a Black Stork of 30.

ANSERES.

Tame Geese are long-lived (see p. 24) and easy to verify, and by inference wild Geese would be long-lived. Two centuries ago Francis Willughby had the story of a domestic Goose which was 80, and was then killed for its destructiveness though yet sound and lusty, from a friend who is spoken of in two places as "of very good credit" and "undoubted fidelity" ('Ornithology,' pp. 14, 358). There is really no reason whatever to question it, especially as Buffon considers that a Goose once reached 100, and Pennant was equally aware of what he terms a vast longevity. There was once a Goose at the Saracen's Head Inn at Paisley, in Renfrew, N.B., computed to be nearly 100 (R. Lee).

Mute Swans have for centuries had the credit of turning into 'Methuselahs,' even to the extent of 300 years (Aldrovandus), and Norfolk waters have produced some supposed patriarchs, one of which is in Norwich Museum. Naumann alludes to Swans from 50 to 100 years old, and Broderip, in his 'Zoological Recreations,' after citing a Swan at Shepperton supposed to be over 100, and another of 50, quotes from the 'Morning Post' the following :—"The beginning of last week [July 1840] an exceedingly well-known character departed this life, namely Old Jack, the gigantic and venerable Swan with which the public have been so long acquainted on the canal in the enclosure of St. James's Park, at the advanced age of 70 years. Old Jack was hatched some time about the year 1770 on the piece of water attached to Buckingham House."

It is on record that a [Mute] Swan died at Alkmaar, a town near Amsterdam, in 1675, which bore a metal collar on which was inscribed the date "1573," indicating a life of 102 years. After considerable search to verify this story, it has been satisfactorily traced by Mr. F. E. Blaauw and Mr. Bruinvis to the original record in the 'Chronyk van Nedenblik door Dirk Burger van Schoorl' (1762).

At the celebrated Swannery at Abbotsbury, in Dorsetshire, the Mute Swans have the reputation of being capable of living 150 years, but it does not appear that any attempt has been made to 'ring' them. *Cygnus atratus* and *C. buccinator* have been kept to 18, and *C. musicus* to 12 years. The oldest Duck I shall have to quote was only 29, but Icelanders have asserted that Eider Ducks have been known to live 100 years (Olafsen and Povelsen).

DIOMEDEIDÆ.

I am indebted to Mr. H. Grönvold for news of an Albatross of about 46, on the authority of a Japanese newspaper called the 'Hiogo News,' and for a translation of the narrative of its capture. The Albatross was taken by the ship 'Duchess of Argyll,' Capt. Hoard, near Cape Horn, with a compass-case attached to its neck, containing the information that it had been previously caught in the middle of the North Atlantic by an American vessel, the 'Columbus,' on May 8, 1840. A new case was affixed, and it was again dated and released, in January or February, 1887. As has been already mentioned, an Albatross has the power of going a very long time without food, which gives it an advantage in the race for life.

The kind assistance of Dr. J. Büttikofer, Mr. E. Meade-Waldo, Mr. H. Grönvold, and Dr. A. G. Butler has been rendered to enable me to compile the following List of 75 species, and I am especially indebted to Dr. Paul Leverkühn, of Sofia, Mr. F. E. Blaauw, of Hilversum, C.M.Z.S., and Prof. Newton for their help. Where the words "still alive" are added, they mean living at the age here given. The sex has been added wherever obtainable, because Brehm thinks there are more male birds than females, and it may be that Nature, to compensate the balance, gives longer life to the female. The three oldest birds of which the sex is known were females, viz.:—♀, *Anser domesticus,* of 80; ♀, *Bubo maximus,* of 68; ♀, *Coracopsis vasa,* of 54.

Name of Species.	Number of years old.	Authority.
Song-Thrush	17	A. G. Butler, F.Z.S.
Turdus musicus.	15	Mr. Bilham, Cromer.
Blackbird .... *Turdus merula.*	20½ still alive.	Thompson's 'Birds of Ireland,' i. p. 148.
,, ,,	♂ 20	Ditto, i. p. 147.
Blue Thrush .... *Monticola cyanus.*	24	H. A. Macpherson, *ex* 'Avicula,' 1897, p. 147.
Nightingale .... *Daulias luscinia.*	25	Dr. Bechstein's 'Cage-birds,' p. 363.
,, ,,	15	Ditto ditto.
,, ,,	10	'Zoologist,' 1865, p. 9725.
House-Martin............ *Chelidon urbica.*	9	'Zoologist,' 1876, p. 4957.
White-headed Manikin....	♀ 18	A. G. Butler, F.Z.S.
Munia maja.	♂ 17	Ditto.
Goldfinch	23	C. Gesner, Hist. Av. (1555).
Carduelis elegans.	17	'Bird's of Ireland,' iii. p. 467.
Canary	20	Zool. 1886, p. 478.
Serinus canarius.	18	J. Mackley, Norwich.
,, ,,	17	'The Field,' June 8, 1867.
Brown Linnet	♂ 17	Zool. 1886, p. 478.
Linota cannabina.	14	G. Thirkettle.
Bullfinch................	19	'Birds of Ireland,' iii. p. 467.
Pyrrhula europæa.	9	G. Thirkettle.
Cardinal Grosbeak........	21	Wilson, Am. Ornith. ii. p. 275.
Cardinalis virginianus.	14	Fox, Newcastle Mus. p. 153.
Great Bird of Paradise .... *Paradisea apoda.*	♂ 15	P. Z. S. 1840, p. 13.
Raven .... *Corvus corax,*	69	Dresser's 'Birds of Europe,' iv. p. 569.

Name of Species.	Number of years old.	Authority.
Raven	50	Zool. 1882, p. 45.
Corvus corax.	24	Dr. J. Büttikofer.
Piping Crow	28	Rotterdam Zool. Gardens, J. Büttikofer.
Gymnorhina tibicen.		
,, ,,	♂ 26	'The Field,' Nov. 12, 1898.
Magpie	21	Zool. 1850, p. 2824.
Pica rustica.		
Chough	17	Zool. 1876, p. 4924.
Pyrrhocorax graculus.	16	Ditto.
Skylark	24	Raczynski, Hist. Nat. Poloniæ, 1745.
Alauda arvensis.		
,, ,,	20	Zool. 1865, p. 9604.
Laughing Kingfisher	11	Rotterdam Zool. Gardens, J. Büttikofer.
Dacelo gigantea.		
Australian Nightjar	8½	'The Field,' June 19, 1869.
Podargus cuvieri.		
Bare-eyed Cockatoo	32	London Zool. Gardens.
Cacatua gymnopis.	♀ 15	F. E. Blaauw, C.M.Z.S.
Sulphur-crested Cockatoo	81 ?	'Birds of Ireland,' iii. p. 467.
Cacatua galerita.	80	'The Field,' Nov. 12, 1898.
,, ,,	50	L. Travis, Bury.
,, ,,	45	'The Field,' Nov. 12, 1898.
Grey Parrot	50	E. T. Roberts, Norwich.
Psittacus erithacus.	40	Rowley, Orn. Misc. i. p. 172.
Greater Vasa Parrot	♀ 54	P. Z. S. 1884, p. 562, P. L. Sclater.
Coracopsis vasa.		
Amazon Parrot	30	In Norwich Museum (*Cubitt*).
Chrysotis amazonica.	24	A. G. Butler, F.Z.S.
Blue Macaw	64	'Revue et Magasin de Zool.' 1864, p. 409.
Ara macao.		
,, ,,	♀ 21	'The Field,' March 3, 1894.
,, ,,	17	J. Büttikofer.
Eagle-Owl	♀ 68 still alive.	E. Meade-Waldo, F.Z.S.
Bubo maximus.		
,, ,,	♂ 53	Ditto.
,, ,,	♀ 34	'Birds of Norfolk,' i. p. 47.
,, ,,	28	The late W. E. Beckwith.

Name of Species.	Number of years old.	Authority.
Ceylonese Fish-Owl *Ketupa ceylonensis.*	39	Amsterdam Zool. Gardens, F. E. Blaauw.
Tawny Owl	♂ 26	In the Norwich Museum.
Syrnium aluco.	21	'The Naturalist,' 1897, p. 131, and 1898, p. 269.
" "	18	Mason's 'Hist. of Norfolk,' App.
Condor *Sarcorhamphus gryphus.*	52 still alive.	Amsterdam Zool. Gardens, F. E. Blaauw.
" "	9¼	'Auk,' 1885, p. 171.
Griffon Vulture *Gyps fulvus.*	♀ 34	London Zool. Gardens ('Zoologist,' 1861, p. 7543).
Sociable Vulture *Otogyps auricularis.*	♀ 24	J. H. Gurney, sen., 'Ibis,' 1877, p. 257.
" "	12	J. Büttikofer.
Cinereous Vulture *Vultur monachus.*	32 still alive.	Amsterdam Zool. Gardens, F. E. Blaauw (*cf.* Norwich Nat. Tr. iv. p. 573).
Sea-Eagle *Haliaëtus albicilla.*	♀ 42	Lord Lilford, Norwich Nat. Tr. iv. p. 564.
" "	36	J. H. Gurney, sen.
Imperial Eagle *Aquila imperialis.*	56	J. G. Keysler's 'Travels,' i. p. 70.
Spanish Imperial Eagle *Aquila adalberti.*	27	Lord Lilford (*cf.* Norwich Nat. Tr. iv. p. 566).
" "	26 still alive.	J. H. Gurney.
Golden Eagle	46	'The Field,' May 11th, 1867.
Aquila chrysaëtus.	41	Pennant, Brit. Zool. i. p. 165.
	28	J. H. Gurney, sen.
Bateleur Eagle *Helotarsus ecaudatus.*	55 still alive.	Amsterdam Zool. Gardens, F. E. Blaauw.
" "	20	J. H. Gurney, sen.
Buzzard	23	Zool. 1876, p. 4829.
Buteo vulgaris.	21	Lord Lilford.
South-American Caracara *Polyborus tharus.*	35	London Zool. Gardens, Edward Blyth.
Red Kite	♀ 38	Zool. 1865, p. 9686.
Milvus ictinus.	♀ 21	Ditto.
" "	♀ 27	J. H. Gurney, sen.

Name of Species.	Number of years old.	Authority.
Yellow-billed Kite *Milvus ægyptius.*	♀ 28	J. H. Gurney, sen.
	13 still alive.	J. Büttikofer.
White Pelican *Pelecanus onocrotalus.*	41 still alive.	Rotterdam Zool. Gardens, J. Büttikofer.
" "	40	Willughby's 'Ornithology,' p. 328.
" "	23	London Zool. Gardens.
Crested Pelican *Pelecanus crispus.*	29 still alive.	London Zool. Gardens.
" "	27	Rotterdam Zool. Gardens.
" "	18	Ditto.
Cormorant *Phalacrocorax carbo.*	23	'British Birds,' by H. O. Forbes and others, iii. p. 167; 'The Field,' May 27, 1882.
American Darter *Plotus anhinga.*	12	Rotterdam Zool. Gardens, J. Büttikofer.
Green-backed Porphyrio *Porphyrio smaragdonotus.*	19	'Ibis,' 1889, p. 398.
	14	Ditto.
White-necked Crane *Anthropoides leucauchen.*	28	Amsterdam Zool. Gardens, F. E. Blaauw.
Common Crane *Grus communis.*	40	London Zool. Gardens, T. Church [*cf.* 'Field,' Jan. 2, 1875].
Heron *Ardea cinerea.*	60	Keysler's 'Travels,' i. p. 70.
	30	'Annual Register,' July 7th, 1767.
" "	22	J. Büttikofer.
Black Stork *Ciconia nigra.*	30	J. H. Gurney, sen., in Dresser's 'B. of Europe,' vi. p. 316.
American Jabiru *Mycteria americana.*	36	Amsterdam Zool. Gardens, F. E. Blaauw.
Sacred Ibis *Ibis æthiopica.*	20 still alive.	London Zool. Gardens, T. Church.
" "	11	J. Büttikofer.
Boatbill *Cancroma cochlearia.*	18 still alive.	Rotterdam Zool. Gardens, J. Büttikofer.

Name of Species.	Number of years old.	Authority.
Domestic Goose	♀ 80	Willughby's ‘Ornithology.’
Anser cinereus, var.	45	‘Birds of Ireland,’ iii. p. 467.
” ”	35	‘City Press,’ no date.
” ”	♀ 31	‘Domestic Poultry,’ p. 152.
Cereopsis Goose	33	Rotterdam Zool. Gardens, J. Büttikofer.
Cereopsis novæ-hollandiæ.		
Bernacle Goose	32	Yarrell, B. B. 4th ed. iv. p. 228.
Bernicla leucopsis.		
Mute Swan	70	‘Zoological Recreations,’ by W. J. Broderip, p. 164.
Cygnus olor.		
Nyroca Duck	♂ 15	J. H. Gurney, sen.
Fuligula nyroca.	13	J. Büttikofer.
” ”	11	Ditto.
Pochard	♀ 20	E. Meade-Waldo.
Fuligula ferina.	still alive.	
” ”	♀ 17	Zool. 1893, p. 148.
” ”	♂ 13	J. H. Gurney, sen.
Wigeon	♂ 23	E. Meade-Waldo.
Mareca penelope.	22	‘The Field,’ May 25th, 1867.
” ”	18	Ditto ditto.
Wild Duck	♂ 29?	‘Birds of Norfolk,’ iii. p. 170.
Anas boscas.	22	J. H. G., Zool. 1875, p. 4541.
” ”	♀ 16	J. Hancock.
Collared Dove	♂ 40	F. E. Blaauw.
Turtur risorius.	♀ 35	Ditto.
” ”	♂ 33	‘The Field,’ Dec. 12th, 1896.
” ”	30	Ditto ditto.
Tame Pigeon	♂ 28½	‘The Field,’ Feb. 9th, 1895. [*Cf.* Macgillivray, B. B. i. p. 279.]
Columba livia, var.		
Silver Pheasant	♂ 21	‘Birds of Ireland,’ p. 27.
Euplocamus nycthemerus.		
Domestic Fowl	♂ 30	‘The Newcastle Museum,’ by G. T. Fox, p. 147.
Gallus domesticus.		
” ”	♂ 25	Proc. Wernerian N. H. Soc. iii. p. 206.
” ”	24	Daniel's ‘Rural Sports,’ iii. p. 21.

Name of Species.	Number of years old.	Authority.
Temminck's Tragopan .... *Ceriornis temmincki.*	♂ 14	F. E. Blaauw.
Oyster-catcher .... *Hæmatopus ostralegus.*	30	Zool. 1846, p. 1501.
Ruff.................... *Machetes pugnax.*	10	London Zool. Gardens, J. Waterman.
Lesser Black-backed Gull.. *Larus fuscus.*	♂ 31	Hancock's 'B. of Northumberland,' p. 139.
" "	30	Ditto. ditto.
" "	♂ 22 still alive.	Zool. 1865, p. 9402.
Herring-Gull .... *Larus argentatus.*	44	'Science Gossip,' 1876, p. 238.
	21	Sharp's 'Hist. of Hartlepool,' App.
Great Skua .... *Stercorarius catarrhactes?*	24	Yarrell, 'Brit. B.' 4th ed. iii. p. 667.
Albatross................ *Diomedea exulans.*	46	C. Rosenberg, Mitt. des orn. Ver. in Wien, 24 Mar. 1887, *per* H. Grönvold.
Apteryx .... *Apteryx australis.*	♀ 20	London Zool. Gardens, C. Bartlett.
Westermann's Cassowary.. *Casuarius westermanni.*	26 still alive.	Rotterdam Zool. Gardens, J. Büttikofer.
Emu .... *Dromæus novæ-hollandiæ.*	28	Rotterdam Zool. Gardens, J. Büttikofer.
" "	22	Ditto ditto.
" "	20	Ditto ditto. [*Cf.* Norwich Nat. Tr. vi. p. 350.]

It will be seen how many families are unrepresented in the preceding list; for example, there are no *Laniidæ, Loxiadæ, Motacillidæ, Sylviinæ, Sturnidæ, Oriolidæ, Paridæ, Picidæ,* or *Capitonidæ,* and no marine or diving-birds such as *Podicipedidæ, Alcidæ, Colymbidæ, Procellariidæ,* and *Sterninæ.* Neither are there any *Otididæ,* though Goldsmith says that Great Bustards usually live 15 years, probably quoting somebody; and it might have been expected that someone would have put forward cases of longevity among the *Tetraonidæ.*

To draw any comparison between birds and mammals is not very easy. Birds attain their growth of stature much quicker than most of the Mammalia, and there seems good reason for thinking they can live as long; but some writers, including Edward Blyth, have held that they cannot. It has been said that in a general way the age of beasts is equal to six times the period which they take to grow to full growth of stature, and there may be truth in this axiom, but it cannot apply to birds. It seems to be quite clearly proved that some tame elephants have reached one hundred years ('The Field,' March 11th, 1871, and January 29th, 1898), and evidence points to the probability of their having reached two hundred in a wild state. Horses have not much chance of running to the length of their tether, but a barge-horse was sixty-one (*W. Youatt*), a Galloway pony at Stilworthy was 60, and a Shetland pony was 42. A Pomeranian dog was 19 (Zool. 1878, p. 100), and another dog 22 (*Youatt*), while Mr. A. Patterson, of Yarmouth, had a cat which was 18 years old. In the London Zoological Gardens, according to Mr. Cornish, an Indian rhinoceros attained to 37, and a Polar bear to 34; while a relative of Dr. Paul Leverkühn's shot a deer which for 40 years had carried a little metal box with the date "April 1829" inside it, proving its age.

It is beyond question that fishes, such as, for example, pike and carp, can attain to a very great age, and so can tortoises. The Hon. Walter Rothschild deposited in the Zoological Gardens a *Testudo daudini* 150 years old; and Gilbert White's *T. marginata* was 54; but one in Norfolk was asserted to be 100 (Norwich Nat. Tr. ii. pp. 164, 174). In the Natural History Museum there is an oil-painting of a pike which was 267 years old. The reptile-house at the Zoological Gardens is stated to contain a Mississippi alligator of 20, and until lately a Reticulated Python of the same age.

Prof. Newton, to whose assistance I am in many ways indebted, has drawn attention to Dr. Weismann's 'Essays on Heredity,' particularly one on the duration of animal life, where the uniformity with which birds maintain their numbers, which I have before referred to, is dwelt upon, and several other questions bearing on the age of birds. Dr. Weismann is of opinion that all birds and mammals outlive the period of reproduction, but in the case of birds the facts I have collected rather show the contrary. He also thinks that only in the largest mammalia—whales and elephants—is the duration of life equal to the longest-lived birds, but on this head we require more facts.

So far as birds are concerned, the points on which further information is wanted are principally:—

1. Are birds of some families longer-lived than those of others?
2. Do female birds live longer than males?
3. Are birds which are long in their incubation therefore long-lived?
4. Do large birds live longer than small ones?
5. Do birds in general live as long as mammals?
6. Do birds which lay only one egg live longer than birds which lay ten?

Reference may also be made to Prof. Ray Lankester's work on the 'Comparative Longevity in Man and the Lower Animals.'

V.—*An Epitome of Dr. Walter's Ornithological Results of a Voyage to East Spitsbergen, in the Year* 1889[*]. By WILLIAM EAGLE CLARKE, F.L.S.

THIS valuable paper on the birds observed by the Expedition to East Spitsbergen promoted by the Bremen

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[*] "Ornithologische Ergebnisse der von der Bremer geographischen Gesellschaft im Jahre 1889 veranstalteten Reise nach Ostspitzbergen. Von Dr. Alfred Walter. (Aus dessen hinterlassenen Notizen bearbeitet von Prof. Dr. Willy Kükenthal.)" Journal für Ornithologie, xxxviii. Jahrg. No. 190, pp. 233–255 (April 1890).

Geographical Society appears to have been little noticed by British ornithologists, even by some who are particularly interested in the Arctic avifauna. For instance, Mr. Trevor-Battye can hardly have been aware of its existence, or he would not have omitted from his "Birds of Spitsbergen as at present determined" (Ibis, 1897, pp. 574–600) such species as the Dunlin and the Knot, discovered by Dr. Walter, as well as the first record of the Sanderling, together with other valuable matter, to which he would doubtless have referred.

Dr. Walter's contribution to our knowledge of the ornis of the European Polar area is of special interest and importance, since it treats of the eastern islands and seas of the Spitsbergen Archipelago, a region of which the avifauna has been but slightly investigated. I therefore hope that this summary may prove of use to those who are unacquainted with the original German version.

The Bremen Expedition arrived at Spitsbergen in May 1889, and spent the summer on the east coast, devoting its attention to geographical and scientific investigations. Dr. Walter did not live to publish the results, but his notes were prepared for publication by his companion, Professor Kükenthal.

The contribution opens with a few notes on the birds observed on the coast of Northern Scandinavia during April and early May, while on the outward voyage. The results proper are treated of under the following headings or sections—(1) Dates of Migration; (2) Breeding-Dates; (3) Nature of Food; (4) Ornis of Whale's Point Harbour and neighbourhood *; (5) Ornis of King Ludwig Islands †; (6) Ornis of Ryk-Ys Islands; (7) Ornis of King Charles Islands; (8) Ornis of the east coast of Barents Island; (9) Ornis of the Olga Straits.

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* Whale's Point Harbour is situated at the south-west corner of Edge Island.

† This small group of islands is about four miles from Whale's Point and lies off the entrance of Deevie Bay, on the south-western coast of Edge Island. The observations were chiefly made on the middle island, named Barentine Island, where the ship of the Expedition was lost.

At the close of the contribution is given a list of all the birds which have been or are supposed to have been observed in the archipelago, 43 in number. This is followed by a comparison between the ornis of the east and west coasts; and finally between the avifauna of the east coast of Spitsbergen and that of Franz Josef Land.

In this epitome I have considered it sufficient, without giving an exact translation, to afford the *essential* information regarding each species observed in the various places visited by the Expedition.

I have, however, quoted *in extenso* the statements concerning the species added to the fauna, and have reproduced pretty fully what is said concerning some of the more interesting forms.

I have thought it best to retain the zoological nomenclature of the original contribution.

PLECTROPHANES NIVALIS.

Whale's Point Harbour. On our first visit, May 29th to June 7th, the Snow-Bunting was in great numbers and building its nest. Later, August 18th to 21st, it was in family parties and preparing for departure.

King Ludwig Islands. June 12th to 14th: many pairs on each island (p. 246). Observed in family parties in August (p. 248).

[Mr. Arnold Pike saw a flock on "Kong Karl Land" on August 20th, 1897 (Geogr. Journ. xi. p. 368).—W. E. C.]

ANSER BRACHYRHYNCHUS.

Whale's Point Harbour. The Pink-footed Goose was observed on the 29th and 31st of May in small parties of three or four" (p. 243).

BERNICLA BRENTA.

Whale's Point Harbour. The Brent Goose was observed in flights, from 29th May to June 7th (p. 243); and again between August 18th and 21st (p. 245).

King Ludwig Islands. June 12th to 14th, nesting in great numbers (p. 247).

Ryk-Ys Islands. July 30th: three young in down found, but as no old birds were seen they are somewhat doubtfully referred to this species. They may have been the young of *B. leucopsis* (p. 249).

BERNICLA LEUCOPSIS.

Whale's Point Harbour. "On the 29th of May and 6th of June, I believe I saw examples of this species, but at so great a distance as not to be certain" (p. 242).

Ryk-Ys Islands. See under previous species.

HARELDA GLACIALIS.

Whale's Point Harbour. The Long-tailed Duck was observed in pairs daily from May 29th to June 7th (p. 243). It was found breeding only here. Two families of young were seen between August 18th and 21st; and small parties of old males were then preparing to migrate (p. 245).

King Charles Islands. Seen on June 24th six miles from the south point of Barentine Island; and a pair also seen approaching the land (p. 249).

SOMATERIA MOLLISSIMA.

Whale's Point Harbour. May 29th to June 7th. Eiders seen in some numbers (p. 243). August 18th to 21st: old and young recorded (p. 245).

King Ludwig Islands. June 12th to 14th: breeding in great numbers on Barentine Island (p. 247).

Ryk-Ys Islands. Found breeding very numerously on July 30th (p. 249).

Olga Straits. Some flights observed in June, but no breeding-places were found (p. 252).

SOMATERIA SPECTABILIS.

Whale's Point Harbour. A few King-Eiders seen from June 5th to 7th (p. 243); and an old male in full moult killed between August 18th and 21st (p. 245).

King Ludwig Islands. Two old males were seen on June 17th, which led us to suspect that this species bred on these islands (p. 247).

PHALAROPUS FULICARIUS.

Whale's Point Harbour. The first Grey Phalarope to arrive was a male on the 19th of May; others followed to June 7th, but only one female was seen to that date (p. 242). Between August 18th and 21st it was found breeding at Deevie Bay, Walter Thymen Straits, and elsewhere (p. 245).

King Ludwig Islands. June 12th to 14th: observed in parties of from six to fifteen (p. 247). Eggs were found on Barentine Island (p. 246). Had already departed from this island in August, and also from Whale's Point Harbour and neighbourhood (p. 248).

Ryk-Ys Island. On July 30th many males were observed in full moult (p. 249).

TRINGA ALPINA.

Whale's Point Harbour. "I observed an old male of this species on the 5th of June, on a marshy tract on a tongue of land free from snow" (p. 242).

King Ludwig Islands. Barentine Island, August 22nd: "A single female shot from among *Tringa maritima*. Obviously on migration" (p. 247).

The Dunlin is new to the ornis of Spitsbergen (p. 254).

[Colonel Feilden picked up at Green Harbour, on July 4th, 1894, the withered wings of a bird which, there can be little doubt, were referable to *Tringa alpina* (Zoologist, 1895, p. 88).—W. E. C.]

TRINGA CANUTA.

King Ludwig Islands. Barentine Island, August 22nd: "An old male killed. On migration" (p. 247).

The Knot is a bird new to the ornis of Spitsbergen (p. 254).

TRINGA MARITIMA.

Whale's Point Harbour. May 29th to June 7th: first observed on May 30th, and then daily arrivals (p. 242). Observed everywhere in families and great flights, between 18th and 21st of August (p. 244).

King Ludwig Islands. A few pairs only, between June 12th and 14th. In August in flocks on migration (p. 247).

Ryk-Ys Islands. A single pair breeding on July 30th (p. 248).

CALIDRIS ARENARIA.

King Ludwig Islands. Barentine Island, August 22nd: "One example on migration" (p. 248).

The Sanderling is described as new to the ornis of Spitsbergen at p. 254.

[Dr. Walter was quite entitled to regard this species as new to the avifauna of Spitsbergen, inasmuch as it had never before been recorded for the archipelago. Indeed his specimen has by some years the precedence over other records, although Mr. Pike obtained a specimen, and saw others, in August 1888.

The Sanderling appears to be a regular visitor in small numbers to the archipelago, for Mr. Bruce has shown me an adult female, in summer plumage, which he obtained at Amsterdam Island on the 15th of August, 1898.—W. E. C.]

STERNA MACRURA Naum.

Whale's Point Harbour. The Arctic Tern appeared on the 3rd of June, and afterwards became an abundant breeding species (p. 244).

Ryk-Ys Islands. Breeding in great numbers on July 30th (p. 249).

King Charles Islands. Observed commonly on the 12th of August (p. 250).

Olga Straits. In small parties at the beginning of August (p. 251).

LARUS GLAUCUS.

Whale's Point Harbour. May 29th to June 7th. The Glaucous Gull was one of the commonest birds (p. 243) and a breeding species (p. 246).

King Ludwig Islands. June 12th to 14th: numerous (p. 247).

King Charles Islands. One seen (p. 249)*.

Olga Straits. Everywhere in small numbers (p. 251).

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* Mr. Pike saw a few Glaucous Gulls here on August 20th, 1897 (Geogr. Journ. xi. p. 368).

LARUS TRIDACTYLUS.

Whale's Point Harbour. May 29th to June 7th: Kittiwakes seeking breeding-places (p. 243). August 18th to 21st: observed in thousands (p. 246).

King Ludwig Islands. June 12th to 14th: abundant (p. 246).

Ryk-Ys Islands. July 30th: many breeding colonies (p. 248).

King Charles Islands. Many seen on the coast on August 12th. Probably breeds on the islands * (p. 250).

Barents Island. Observed moving south on the night of August 5th–6th, along with *Lestris pomarina* and *L. parasitica* (p. 250).

Olga Straits. Abundant in small flocks during June and July (p. 251).

LARUS EBURNEUS.

Whale's Point Harbour. The Ivory Gull was occasionally observed between May 20th and June 7th; and a single example only seen between August 18th and 21st (pp. 244 & 246).

King Ludwig Islands. Seen in numbers, but not breeding, June 12th to 14th (p. 247).

Ryk-Ys Islands. Common, but not breeding, July 30th (p. 249).

King Charles Islands. One observed (p. 250).

Barents Island. One seen between August 5th and 6th (p. 250).

Olga Straits. Observed in great numbers on the edge of the ice (251).

[At Cape Weissenfels, Swedish Foreland, Mr. Pike, in August 1897, observed the Ivory Gull breeding along with Kittiwakes and Mandt's Guillemots (Geogr. Journ. xi. p. 368).—W. E. C.]

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* Mr. Pike found it breeding at Cape Weissenfels, Swedish Foreland, along with Ivory Gulls and Mandt's Guillemots, in August 1897 (Geogr. Journ. xi. p. 368).

Lestris pomarina. [*Stercorarius pomatorhinus.*]

King Charles Islands. A Pomatorhine Skua observed on the 12th August (p. 250).

Barents Island. Observed on the night of August 5th–6th with *Larus tridactylus* and *Lestris parasitica*, flying in troops of from five to fifteen individuals, from north to south along the low-lying strips. As this species was not seen until the end of July, it is inexplicable where the "crowds" seen in August came from (p. 250).

Olga Straits. Appeared at the end of July, and became frequent at the beginning of August (p. 251).

[Regarding the numbers seen by Dr. Walter, it is interesting to recall the fact that the Rev. E. A. Eaton ('Zoologist,' 1874, p. 3812) also noted the abundance of this species in August in Hinlopen Strait, and at Low Land on the north coast. I am afraid it is not possible, in the present state of our knowledge of the summer distribution of this species, to form an opinion whence these crowds of migrants came. Parry observed it in 82° N., while sledging northward of Spitsbergen.—W. E. C.]

Lestris parasitica. [*Stercorarius crepidatus.*]

Whale's Point Harbour. Richardson's Skua was a very abundant species and observed far inland (pp. 244 & 246).

King Ludwig Islands. June 12th to 14th: many pairs observed (p. 247).

Ryk-Ys Islands. Only one of the dark form seen on the North Island on July 30th (p. 249).

Barents Island. Observed on the night of August 5th–6th, along with Pomatorhine Skuas and Kittiwakes, moving south (p. 250).

Olga Straits. Everywhere, and increasing in numbers and frequency to the beginning of August, both black- and white-bellied forms being found (p. 251).

Lestris buffoni. [*Stercorarius parasiticus* (L.).]

East Coast of Barents Island. The Long-tailed or Buffon's Skua was twice seen on the 5th of August on the firm ice (p. 251).

URIA BRUENNICHII Cab.

Whale's Point Harbour. Brünnich's Guillemot was breeding in small numbers (p. 245).

King Ludwig Islands. Observed between June 12th & 14th, but does not breed on so flat an island [Barentine I.] (p. 245).

Ryk-Ys Islands. Observed on July 30th, but does not breed (p. 249).

King Charles Islands. Observed and probably breeds (p. 249).

Olga Straits. The commonest species noted, but does not breed anywhere on the shore of the Straits (p. 251).

URIA GRYLLE L. var. MANDTII Licht.

Whale's Point Harbour. May 29th to June 7th: Mandt's Guillemot was very abundant (p. 243).

King Ludwig Islands. A numerous breeding species (pp. 246 & 248).

Ryk-Ys Islands. One seen on July 30th, and a pair probably breeding (p. 249).

Olga Straits. Everywhere in small numbers (p. 251).

[At Cape Weissenfels, Swedish Foreland, in August 1897, Mr. Pike observed Mandt's Black Guillemot breeding, along with Kittiwakes and Glaucous Gulls (Geogr. Journ. xi. p. 368).—W. E. C.]

MERGULUS ALLE.

Whale's Point Harbour. Little Auks seen in small flocks, May 29th to June 7th (p. 243). Breeding in small numbers, August 8th to 21st (p. 245).

King Ludwig Islands. Abundant in June (p. 247); and young observed, under stones, in August (p. 247).

King Charles Islands. Noted, and probably breeds (p. 249).

Olga Straits. Seen singly and in flocks (p. 251).

MORMON ARCTICUS.

Whale's Point Harbour. A Puffin was observed on the 18th of August. This bird is one of the greatest rarities in East Spitsbergen (p. 245).

Olga Straits. Seen twice during our stay of two months in the straits, two being observed off the east coast of Edge Island, and one in the middle of the straits. These were probably accidental appearances of an otherwise absent bird from the Eastern Spitsbergen seas (p. 252).

COLYMBUS SEPTENTRIONALIS.

Whale's Point Harbour. A male Red-throated Diver arrived on the 31st of May, a female on the 2nd of June (p. 243). Two pairs were observed with young between August 18th and 21st (p. 245).

PROCELLARIA GLACIALIS.

Whale's Point Harbour. The Fulmar was a common species, having breeding-stations at Whale's Point and Deevie Bay (pp. 244 & 246).

King Ludwig Islands. Abundant round Barentine Island, June 12th to 14th (p. 247).

Ryk-Ys Islands. Observed on July 30th (p. 249).

King Charles Islands. Observed (p. 250).

Olga Straits. Fairly common, but does not appear to breed on the shores of the straits (p. 252).

In conclusion, I would enter a protest against the omission, or rather exclusion, of *Rhodostethia rosea* from the Ornis of the Spitsbergen seas. It is impossible to doubt the accuracy of the definite statements made by Commander Ross, the discoverer of the species, and contributed to the appendix of Parry's 'Polar Voyage' (p. 195). Here he avers that "several were seen during our travels over the ice, and as far north as the Expedition went"; while in the narrative of the sledging journey northward it is referred to as being observed on no fewer than five occasions (*op. cit.* pp. 81, 87, 89, 101, 110) *.

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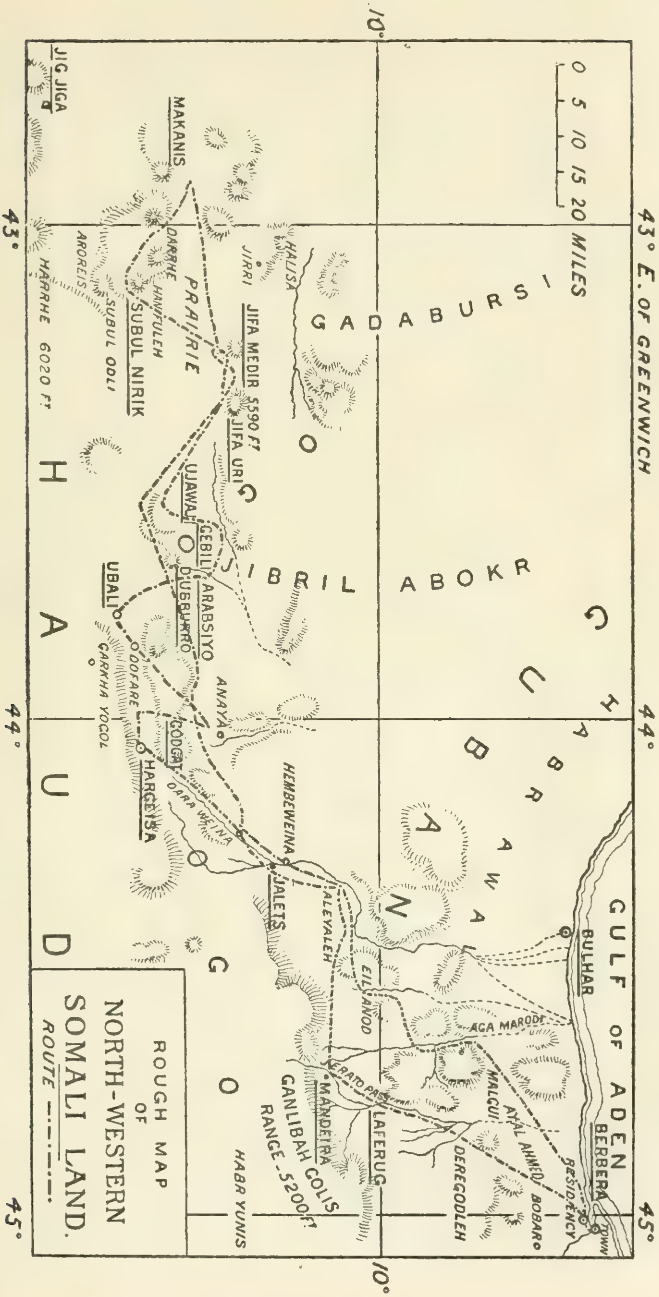
* [*Cf.* Saunders, in 4th ed. Yarrell's 'British Birds,' iii. p. 581. A similar protest might well be made against the exclusion of *Xema sabinii*: *cf.* tom. cit. p. 576.—EDD.]

VI.—*On the Results of a Collecting-Tour of Three Months in Somaliland.* By R. McD. Hawker, F.Z.S.

(Plate II.)

Mr. G. H. Cheetham and I, having engaged the services of Mr. Harwood (who had been before in Somaliland with Mr. E. Lort Phillips, and had there done excellent work) as collector, arrived at Aden on October 17th, 1897, and called on Colonel Sadler, the Political Resident and Consul for the Somali coast. Col. Sadler told us that we could not be allowed to go into Abyssinia, as we had planned, as at that time the treaty with Menelik had not been ratified, and that for the same reason we could not go into Somaliland unless we undertook not to pass outside the British Protectorate. This was a great disappointment to us after all our preparations, as it confined us to a well-known country. But Colonel Sadler had kindly engaged Adan Yusuf as our head man, and had told him to buy camels for us at Berbera. Our next difficulty was that our rifles had not arrived; so we had to spend nearly three weeks in Aden, waiting for them. Here we passed the time more pleasantly than one could have expected, thanks to the hospitality of Colonel Sadler and some of the officers of the garrison. Our rifles arrived on November 1st, and next day we started for Berbera, arriving there after a voyage of fifteen hours on a horrible little steamer. At Berbera Captain Walter Merewether, the Resident, besides being our host, helped us in every way possible; so that we were able to start off on November 5th. Our caravan of 37 Somalis was made up of camel-men, shikaris, tent-boys, a cook, and syces. The camel-men were armed and had to act as guard. Our first march took us twelve miles along the coast, and when we got to the camp we found everything in order.

The track along the coast was sandy, and the country was covered with low mimosa bushes and abounded in Dik-dik (*Madoqua swaynei*); but as we turned inland the bushes were replaced by thorn-trees about twelve feet high. Our track


ROUGH MAP OF NORTH-WESTERN SOMALI LAND.
ROUTE
0 5 10 15 20 MILES
43° E. OF GREENWICH
43°
44°
45°
10°
GULF OF ADEN
BERBERA
TOWN
RESIDENCY
BULHAR
AGA MARODI
GADABURSI
JIBRIL ABOKR
HAUD
JIG JIGA
MAKANIS
DARRHE
HANFULEH
AROREIS
HARRHE 6020 FT
SUBUL ODLI
SUBUL NIRIK
PRAIRIE
JIRRI
HALISA
JIFA MEDIR 5590 FT
JIFA URI
UJAWAL
GEBILI
DUBBURRO
ARABSIYO
UBALI
GARKHA YOCOL
ODOFARE
GODGAI
HARGEYSA
DARA WEINA
ANAYA
HEMBEWEINA
JALETS
ALEYALEH
EIL ANOD
ERATO PASS
MANDEIRA
GANLIBAH GOLIS RANGE 5200 FT
LAFERUG
MALGUI
AYAL AHMED
DEREGODLEH
BOBAR
HABR YUNIS

now lay to the south-west, and after three marches we camped at Laferug, the first water we had seen since we left Berbera. Near the water I saw a large flock of Abyssinian Guinea-fowl (*Numida ptilorhyncha*) feeding on some green grass; they were fairly tame, and let me get within easy shot. Next day we marched to Mandeira, and camped near the water in a very pretty spot surrounded by rocky hills and commanding a good view of Ganlibah and the Golis mountains. Here we found many birds, and also obtained good specimens of the Lesser Koodoo (*Strepsiceros imberbis*). It being rather hot at Mandeira, we decided to push on to Hargeisa. Two marches brought us to Jalets.

Since we left the coast we had been gradually ascending; and on November 13th we camped at mid-day above Hargeisa, the altitude being nearly 5000 feet. We sent the caravan to Hargeisa, and turned off the track to hunt. After shooting a cheetah we got into Hargeisa as it was growing dark, and found our camp pitched on a beautiful plain surrounded by large "Jub" thorn-trees. That night I was setting traps for small mammals, some little way from the camp, when I heard the dry rasping call of a leopard close to me. This was answered by a call on the other side of me; so I thought it about time to leave for the camp. Next day Sheikh Mattar Hersi, the most influential mullah in Somaliland, paid us a visit. This Sheikh governs Hargeisa, which is a permanent village, where a certain amount of sorghum is cultivated.

There were many birds near Hargeisa, and I found great flocks of Finches and Doves feeding on the sorghum stubbles, besides which Francolins and Guinea-fowl were very numerous about the river-bed. We meant to stop here for several days, but news was brought in of a lion about one march off, so we left on the 15th November.

On the 18th we marched to Godgat, and collected there for two days. This is in a basin-like depression about six miles across, surrounded by rugged hills, which are a favourite resort for the Greater Koodoo. A Somali rode over from Ubali, which was about fifteen miles off, to tell us a lion had killed a pony that morning. I rode back with him to the place and found the carcass, but the lion had been driven off before he had eaten any of it.

We stopped here till the 28th of November and then marched to Arabsiyo, where we heard that two lions had killed a camel about five miles off. Cheetham went after them, and I went on to the water to collect. I waited there till Cheetham returned, unsuccessful, after two very unpleasant nights spent in the rain without any tent. Next day we walked along some rough hills to Gebili, another watering-place, where there were a great many fairly fresh elephant-tracks. On December 3rd some Somalis rode to the camp and told us the elephants were watering at Ujawaji, about twelve miles further south. So we marched to a spot about five miles beyond the Ujawaji water-holes and camped. The rain had filled the water-holes, and all the villagers had moved out from the permanent waters to get grass for their live-stock on the edge of the Haud. Here we got the first glimpse of the open grass-plain called by the Somalis the Bund. Past the yellow sea of grass, to the west, we could see the remarkable hills Jifa Uri and Jifa Medir standing up above the plain.

Next day Cheetham, who had got a chill through his wetting, staid in camp; but I started off at dawn to look for the elephants, and was ultimately successful in killing one. The hunt was very exciting while it lasted, but I felt rather ashamed of myself for killing a big beast just for the sake of his tusks. However, elephants are doomed in Somaliland, as both the Somalis and Abyssinians are always hunting them and kill all they can, both small and great. We left Ujawaji on December 16th, having collected a good many birds there, and marched to Jifa Uri. Our route was across part of the Bund, and we saw many herds of Sœmmerring's Gazelle and Oryx; also a fair number of Kori Bustards (*Eupodotis kori*), of which I managed to secure a good specimen.

Jifa Uri is a rocky hill covered with scrub, and seems to be the headquarters of all the hyænas of the district, judging by the noise they made at night and the number of their tracks about it. There was plenty of dry grass among the scrubs at the foot of the hill, and there were a great many Little Bustards, Francolins, Guinea-fowl, and hares in it, while the Kori Bustard was plentiful on the edge of the Bund. Our next halt was in a most desolate, barren place, without a blade of grass, about five miles north-west of Jifa Uri. We camped about a mile from a village, the inhabitants of which made the night hideous with shouting and singing to keep off lions. We could also hear shouting in more distant villages, so we reckoned we were in a good spot for lions; and this proved to be true, for we had a successful hunt after them on Jifa Medir, a conglomeration of granite boulders, on the top of which a huge rock, about eighty feet high, stands up perpendicularly. The hill rises to some 500 feet and is about a mile long. It is covered with scrub, and full of caves formed by the tumbled-down rocks.

The next day (Dec. 20th) we moved our camp south of Jifa Medir, and near the edge of the Bund. The watering-place called Jirri was only eleven miles off, and there was plenty of feed for our camels and ponies round the camp, while the Bund swarmed with game. There was a splendid view from a small hill close to the camp to the southward. Looking across the Bund were the four conical Subul hills and the more massive Makanis, and far away beyond were the dark Harrar mountains. In the north was the bold Jifa Medir, and beyond it the Gadabursi hills, while far to the south-east rose the dark line of the Haud plateau. We spent many evenings watching the game on the Bund from this small hill, which, judging by the terraces which had been built up on the side of it, had at one time been cultivated. We noticed similar terraces on Jifa Medir, and there was also an old road leading to the shoulder of the hill. We also saw large holes which had been mined out of the rock to hold water, and there were extensive circles of stones near the foot of Jifa Medir. I asked the Gadabursi people whether they knew anything about these relics; but the only answer that I could get was that they belonged to the people that used to live in the country before the Somalis came.

The day after we arrived a Gadabursi brought news that he had seen the tracks of a large lion, and he had followed them to Jifa Medir. We collected the men and went off to the hill and started to beat it, and eventually killed a fine lion.

On New Year's eve Cheetham started early to look for Greater Koodoo, while I went off later to hunt Oryx for meat.

Shortly afterwards, hearing that lions were roaring near Makanis, we decided to take a few men over there, and to leave the main camp at Jifa Medir in charge of Harwood; so we started off on January 3rd. We marched about twenty miles along the edge of the Bund, and camped at the base of a hill called Libahphul, about three miles from Makanis. There was abundance of grass here, about two feet and a half high, and there were many herds of Oryx, Sœmmerring's Gazelle, and Hartebeest close to the camp.

The Hartebeests went in herds of several hundreds, and were so tame that the herd would open out to let us pass through, and stand within 150 yards watching us. We heard the lions roaring one night, but it was several days before we found a newly-killed Hartebeest. There were tracks of two lions near the remains, and we followed these for several miles, when we found the tracks of two other lions which had joined them. As we were following we saw a lion get up from under a solitary thorn-tree and then lie down again. We went up to the tree and found four lions asleep under it. We had a very exciting time for about a minute, as after we had killed two the other two charged us; but we managed to stop them before they did any harm. We moved our camp afterwards to Subul Nirik, and hunted in the vicinity of the Abyssinian fort Jig-Jiga. Our Somalis were much afraid of the Abyssinians, and purposely used up the water, so that we had to march back to the main camp. At Subul Nirik we saw several Midgans hunting Ostriches by stalking them from behind camels. Another way of getting the cock birds is by finding the nests and placing poisoned arrow-heads up in the ground among the eggs, so that when the Ostrich sits on the eggs the arrows stick into it. We started back for Duburro soon afterwards to look for the lions we had left there on our way west. Here we heard that another sportsman was hunting them, so we went on to Godgat, and shortly afterwards returned to Berbera. The country had changed for the worse since we had marched up. There was now not a blade of grass left, and the thorn-trees looked drier than ever. This being so we had to push on to Berbera as fast as we could, and arrived there on February 3rd. Here we stopped for some time, packing up our specimens and collecting.

Two other hunting-parties came in, and we all went over together to Aden, whence we returned to England by the P. & O. steamer 'Victoria.'

For the determination and arrangement of the birds enumerated in the following list of those met with I am indebted to the assistance of my friend Dr. Bowdler Sharpe, who has kindly helped me in every way.

List of Birds obtained in Somaliland.

1. Cosmopsarus regius Reichen.; Sharpe, P. Z. S. 1895, p. 459.

No. 39. ♂. Hargeisa, Nov. 14, 1897. { Bill and feet black; iris pale yellow.
No. 84. ♂. Arabsiyo, Nov. 29, ,, ,, ,,
No. 99. ♂. ,, Dec. 2, ,, ,, ,,
No. 237. ♀. Godgat, Jan. 28, 1898. ,, ,,
Nos. 224, 228. ♂ ♀. Ujawaji, Jan. 25, 1898. ,, ,,

I found these birds distributed from within thirty miles of Berbera to the western frontier of Harar. They went in flocks, often with *Spreo superbus*, but were rather shy and did not feed about the camps like the latter bird.

2. Amydrus blythii Hartl.; Sharpe, Cat. B. Brit. Mus. xiii. p. 164.

Nos. 256, 257. ♂ ♀. Dobar, Feb. 10, 1898. Bill and feet black; iris brown.

I found these two individuals feeding in the garden at Dobar.

3. Heteropsar albicapillus (Blyth); Sharpe, P. Z. S. 1895, p. 461.

No. 233. ♂ ad. Godgat, Jan. 27, 1898. } Bill and feet black; iris pale yellow.
No. 236. ♂. „ Jan. 28, „ }

This bird was not very common, and I saw it only four times altogether.

4. Spreo superbus (Rüpp.); Sharpe, P. Z. S. 1895, p. 461.

No. 58. ♂. Daboloc, Nov. 25, 1897. Bill and feet black; iris pale yellow.

This bird was very common after leaving Laferug for the plateau. It was very tame, and came into camp, fearlessly feeding on scraps. Often while we halted at midday this bird and *Lamprocolius chalybeus* would walk quite close to our feet and pick up scraps thrown to them.

5. Lamprocolius chalybeus (Ehr.); Sharpe, P. Z. S. 1895, p. 460.

No. 243. ♂ ad. Hembeweina, Jan. 29, 1898. Bill and feet black; iris yellow.

I did not see many of these birds; they were generally about the villages, and went in company with *Spreo superbus*.

6. Buphaga erythrorhyncha Stanl.; Sharpe, P. Z. S. 1895, p. 461.

No. 62. ♂. Daboloc, Nov. 25, 1897. Bill red; feet black; iris yellow.

No. 63. ♂ juv. „ „ „ Bill black; feet black; iris brown.

When I first saw these birds climbing over the ponies and camels, I thought what useful creatures they were. I soon, however, altered my opinion when I noticed that the ponies' backs were not improved by their attentions. The old scars became open sores, and the small sores were enlarged. One day I watched one of these birds through a glass on a villager's donkey. It was very busy pecking the donkey's back. I went up to the donkey and found it bleeding from a freshly-opened scar, the bird evidently having pecked off the skin. I always noticed the Somalis drive these birds away from their ponies. In one specimen I found a large green tick fastened to its neck.

7. Buchanga assimilis (Bechst.); Sharpe, P. Z. S. 1895, p. 462.

No. 71. ♀. Sheikh Wufli, Nov. 28, 1897. Bill and feet black; iris red.

No. 187. ♂. Jifa Medir, Jan. 8, 1898.

This is very common, and one of the nicest birds one sees. It is a very curious bird, and is exceedingly tame. Taking its position on a bush near to camp, it seems interested in everything going on, now and then dashing after a fly right among the men and beasts. I have seen it when on the march often fly along with the caravan, catching flies within a yard of a man's hand. One was so tame that one of the camel-men caught it off a bush with his hand and brought it to me uninjured. It did not seem very frightened, and when I let it go it only flew about twenty yards and settled on a bush and looked at us.

8. Vidua hypocherina J. & E. Verr.; Sharpe, Cat. B. Brit. Mus. xiii. p. 208 (1890).

No. 98. ♂. Arabsiyo, Dec. 2, 1897. { Bill and feet dusky; iris dark brown.
No. 114. ♀. ,, Dec. 3, ,, ,, ,,
No. 115. ,, ,, ,, ,, ,,

I saw these birds only at Arabsiyo and Hargeisa. At the latter place they joined with flocks of other Finches feeding on the jowari stubbles.

The female is a very tawny-coloured bird, with broad black stripes, with the centre of the crown tawny and flanked on each side by a black band. The young male is more tawny than the female, and shows some of the blue-black feathers of the adult male.

9. Linura fischeri (Reichen.); Sharpe, P. Z. S. 1895, p. 463.

No. 93. ♀. Arabsiyo, Nov. 30, 1897. Bill red; feet light brown; iris light brown.

No. 100. ♂. Arabsiyo, Dec. 2, 1897. Bill and feet pink; iris light brown.

I noticed this bird only in flocks near the water at Arabsiyo and Gebili. They were in winter plumage, and were conspicuous by their red bills.

10. Steganura paradisea (L.); Sharpe, P. Z. S. 1895, p. 464.

No. 42. ♂. Hargeisa, Nov. 15, 1897. {Bill and feet black; iris brown.
Nos. 95–97. ♂ ♀. Arabsiyo, Dec. 1, „ „ „
Nos. 107–9 ♂, 110 ♀. „ „ „ „ „

These birds were very plentiful at Hargeisa and Arabsiyo; but I never saw them further west than Gebili.

11. Amadina fasciata (Gm.); Sharpe, P. Z. S. 1895, p. 466.

Nos. 105, 106. ♂ ♀. Arabsiyo, Dec. 2, 1897. {Bill slate; feet horn-colour; iris dark brown.
No. 112. ♂. „ Dec. 3, 1897. „
No. 113. ♀. „ „ „ „
No. 119. ♂. Gebili, „ „ „

I got these birds at water-pools, where they came in flocks in the middle of the day.

12. Estrelda nigrimentum Salvad.; Sharpe, P. Z. S. 1895, p. 467.

Nos. 40, 41. ♂. Hargeisa, Nov. 14, 1897. Bill and feet black; iris brown.

No. 192. ♀. Jifa Medir, Jan. 10, 1898. Bill and feet black; iris brown.

13. Estrelda rhodopyga (Licht.); Sharpe, P. Z. S. 1895, p. 446.

No. 118. ♂. Gebili, Dec. 3, 1897. Bill and feet black; iris dark brown.

I saw a flock of these birds at the native wells, but I managed to get only one specimen.

14. ÆDEMOSYNE CANTANS (Gm.); Sharpe, P. Z. S. 1895, p. 466.

Nos. 102, ♀, 103, 104, ♂. Arabsiyo, Dec. 2, 1897. Bill slate; feet horn-colour; iris dark brown.

No. 117. ♀. Gebili, Dec. 3, 1897. Bill and feet slate-colour.

No. 217. ♂. Jifa Uri, Jan. 21, 1898.

15. GRANATINA IANTHINOGASTER.

Granatina ianthinogastra (Reichen.); Sharpe, Cat. B. Brit. Mus. xiii. p. 404 (pt.) (1890).

No. 59. ♂. Daboloc, Nov. 25, 1897. }
No. 74. ♂. Sheikh Wufli, Nov. 28, „ } Bill red; feet black; iris light hazel.

No. 94. ♀. Arabsiyo, Nov. 30, „ Bill black; feet black; iris light brown.

No. 123. ♀. Ujawaji. Dec. 8, „ Bill red; feet black; iris and eyelids red.

These birds were common. They were very tame, and came to the camp to feed on the ground close to the zareba. They went in small families, and were generally to be seen feeding about old zarebas.

The Somaliland form of this pretty Weaver-Finch differs from the typical *G. ianthinogaster* in the blue line on the base of the forehead and the much paler rufous colour of the plumage.

16. DINEMELLIA DINEMELLI (Rüpp.); Sharpe, P. Z. S. 1895, p. 469.

No. 136. ♂. Ujawaji, Dec. 10, 1897. Bill and feet black.

This bird was extremely common on the table-land. It often went in small flocks in company with *Spreo superbus*. It is very noisy and tame.

17. **Textor intermedius** (Cab.); Shelley, Ibis, 1885, p. 410.

Nos. 210, 211. ♂ ♀. Jifa Medir, Jan. 19, 1898. Bill reddish brown; feet black; iris brown.

I saw only two flocks of these birds; they were rather wild and hard to get at.

18. **Petronia pyrgita** (Heugl.); Shelley, Ibis, 1885, p. 408.

No. 61. ♂. Daboloc, Nov. 25, 1897. Bill horn-colour; feet dark grey; iris light brown.

No. 164. ♀. Jifa Medir, Dec. 31, 1897. Bill light horn-colour; feet grey; iris brown.

No. 190. ♀. Jifa Medir, Jan. 10, 1898. Bill slate-colour; feet slate; iris brown.

These birds were found in the jungle, where they generally went in small flocks. Their note when flying was very much like that of *Passer domesticus*, but deeper.

19. **Passer ruficinctus** F. & R.; Sharpe, Ibis, 1891, p. 256.

Nos. 186, 193. ♂. Jifa Medir, Jan. 8–10, 1898. Bill dark slate-colour; feet slate-colour; iris brown.

This bird was not common, and I saw only a very few of them. They did not come round my camp at Jifa Medir until I had been there for several weeks.

20. **Serinus maculicollis** Sharpe, P. Z. S. 1895, p. 470, pl. xxvii. fig. 8.

No. 73. ♂. Sheikh Wufli, Nov. 28, 1897. Bill and feet brown; iris light hazel.

No. 138. ♀. Ujawaji, Dec. 10, 1897.

No. 157. ♂. Jifa Medir, Dec. 30, ,, {Bill dusky brown; iris brown.

No. 165. ♂ imm. ,, Dec. 31, ,, Bill black.

The male obtained on the 31st of December is immature, and has the lower throat spotted with black, as in the adult female.

21. **Fringillaria striolata** (Licht.); Sharpe, Cat. B. Brit. Mus. xii. p. 561 (1888).

This species is apparently new to Somaliland. I met with only a single example.

22. **Emberiza poliopleura** (Salvad.); Sharpe, P. Z. S. 1895, p. 471.

No. 53. ♂. Godgat, Nov. 18, 1897. Bill and feet dark horn-colour; iris brown.
No. 70. ♂. Daboloc, Nov. 25 „ „ „
No. 185. Jifa Medir, Jan. 8, 1898. „ „
No. 191. ♂. „ Jan. 10, „ Bill and feet light brown.

23. **Mirafra intercedens** (Reichen.); Elliot, Field Columb. Mus. Orn. i. no. 2, p. 37 (1897).

No. 81. ♀. Arabsiyo, Nov. 29, 1897. Bill and feet light brown; iris light brown.

No. 129. ♂. Ujawaji, Dec. 9, 1897. Bill dark horn; feet light horn-colour; iris hazel.

No. 155. ♂. Jifa Medir, Dec. 19, 1897. Bill horn-colour.

Nos. 170, 171. ♂ ♀. Jifa Medir, Jan. 2, 1898. Bill horn-colour; iris light brown.

No. 220. ♀. Ujawaji, Jan. 24, 1898. Bill light horn-colour; iris light hazel.

24. **Mirafra gilletti** Sharpe, P. Z. S. 1895, p. 472.

No. 80. ♂. Arabsiyo, Nov. 29, 1897. Bill and feet light brown; iris light hazel.
No. 101. „ Dec. 2, „ Bill and feet horn-colour; iris light hazel.

The streaks on the throat of the bird killed in November are very much more rufous than in the other specimen.

25. **Mirafra marginata.** (Plate II. fig. 2.)

Mirafra marginata Hawker, Bull. Brit. Orn. Club, vii. p. lv (1898).

No. 153. ♀. Ujawaji, Dec. 16, 1897. Iris light hazel.

On comparing this specimen with Heuglin's description of the type of *Geocoraphus simplex* from Qonfudah, in Arabia, in the Berlin Museum, there are several small differences to be noticed. In *M. marginata* the outer tail-feather is white, with a long oblique blackish mark on the inner web, thus resembling *M. simplex,* but no mention is made of the very broad and distinct creamy-buff margins to the wing-coverts, which are the most conspicuous feature of the Somali Lark.

Although also allied to *M. cantillans,* the Somali species is distinguished from it by the creamy-buff edges to the wing-coverts, these being sandy-buff in *M. cantillans.* The bill in the latter bird is brown with a yellow lower mandible, whereas in *M. marginata* it is horny brown, with a whitish under mandible.

During his recent visit to England, Dr. Reichenow very kindly brought the type of *M. simplex* to compare with the type of *M. marginata.* The two species proved to be quite distinct, and both Dr. Bowdler Sharpe and Dr. Reichenow acquiesced in this determination.

26. GALERITA CRISTATA (L.); Sharpe, P. Z. S. 1895, p. 474.

No. 145. ♂. Ujawaji, Dec. 14, 1897. { Bill dusky brown; feet brown; iris light brown.

No. 273. ♂. Berbera plains, Feb. 22, 1898. „ „

27. AMMOMANES AKELEYI Elliot, Field Columb. Mus. Orn. i. p. 39.

Nos. 28, 31. ♂. Laferug, Nov. 8, 1897.

No. 32. ♂. Mandeira, Nov. 9, 1897.

The three specimens are all alike in colour, and appear to belong to the dark form which Mr. Elliot has named *A. akeleyi.*

28. ALÆMON DESERTORUM (Stanl.); Sharpe, Cat. B. Brit. Mus. xiii. p. 518 (1890).

A. alaudipes Lort Phillips, Ibis, 1898, p. 400.

No. 266. ♀. Berbera plains, Feb. 17, 1898. Bill grey; feet white; iris brown.

No. 274. ♀. Berbera plains, Feb. 22, 1898.

I saw this bird generally on the salt-flats near the sea-shore. When it flew the white bars on its wings were very conspicuous.

29. Motacilla alba L.; Sharpe, Cat. B. Brit. Mus. x. p. 464 (1885).

No. 116. ♂. Gebili, Dec. 3, 1897. Bill and feet black; iris dark brown.

This bird often came into camp in the early morning and walked about for a short time, and then flew off after satisfying its curiosity.

30. Motacilla flava L.; Sharpe, P. Z. S. 1895, p. 473.

No. 177. Jifa Medir, Jan. 5, 1898. Bill and feet black; iris brown.

31. Anthus sordidus Rüpp.; Lort Phillips, Ibis, 1898, p. 402.

No. 125. Ujawaji, Dec. 8, 1897. Feet light brown.

No. 148. „ Dec. 15, „ Bill dusky; feet pale; iris bright brown.

No. 156. Jifa Medir, Dec. 19, 1897. Feet light horn; bill dark brown.

Nos. 161, 162. ♂ ♀. Jifa Medir, Dec. 31, 1897.

No. 175. ♀. Jifa Medir, Jan. 3, 1898.

Nos. 181, 182. ♀. Jifa Medir, Jan. 6, 1898.

This bird was very common on the plateau.

32. Anthus campestris (L.); Lort Phillips, Ibis, 1897, p. 401.

No. 140. Ujawaji, Dec. 13, 1897.

No. 180. ♀. Jifa Medir, Jan. 6, 1898.

No. 200. ♂. Makanis, Jan. 12, 1898.

No. 275. ♂. Berbera, Feb. 25, 1898.

33. Cinnyris osiris (Finsch); Sharpe, P. Z. S. 1895, p. 474.

Nos. 158, 159. ♂. Jifa Medir, Dec. 30, 1897.

No. 166. ♂. Jifa Medir, Jan. 1, 1898.
No. 189. ♂. „ Jan. 10, „
Nos. 208, 209. ♂. „ Jan. 19, „
No. 226. ♂. Ujawaji, Jan. 25, 1898.

This Sunbird was very common about Jifa Medir, where it was feeding on the flowers of the parasite growing on the acacias.

34. Cinnyris albiventris (Strickl.); Sharpe, P. Z. S. 1895, p. 474.

a. ♂. Berbera plains, Feb. 1898.

This bird is common on the plains of Berbera.

35. Cinnyris habessinicus (H. & E.); Sharpe, P. Z. S. 1895, p. 474.

No. 230. ♂. Ujawaji, Jan. 26, 1898. Bill, feet, and iris black.

Was fairly common on the plateau.

36. Cinnyris hunteri Shelley; Sharpe, P. Z. S. 1895, p. 475.

No. 241. ♂. Ujawaji, Jan. 28, 1898.

I saw only one specimen of this bird.

37. Anthothreptes orientalis Hartl.; Sharpe, P. Z. S. 1895, p. 475.

No. 30. ♂. Laferug, Nov. 8, 1897. Bill and feet black; iris brown.

I saw several specimens of this bird about Laferug, but did not notice it anywhere else.

38. Zosterops abyssinica Guérin; Sharpe, Cat. B. Brit. Mus. ix. p. 168 (1884).

No. 174. ♀. Jifa Medir, Jan. 3, 1898. Feet and bill dark brown; iris brown.

This Zosterops reminded me of *Z. cærulescens* of Australia. It seemed to have the same habits, but did not utter the plaintive note which the latter does when hunting for food.

39. Parus thruppi Shelley; Sharpe, P. Z. S. 1895, p. 476.

Nos. 47, 48. ♂ ♀. Haragogara, Nov. 17, 1897. Legs dark slate-colour; bill black; irides dark brown.

No. 163. ♀. Jifa Medir, Dec. 31, 1897. Legs grey; bill black; irides brown.

No. 168. ♂. Jifa Medir, Jan. 2, 1898. Legs grey; bill brown; irides dark brown.

I was first attracted by the note of this bird, which was somewhat harsher than that of *Parus major*. Its habits seem to be identical with those of the latter.

40. ANTHOSCOPUS MUSCULUS Hartl.; Shelley, B. of Africa, i. p. 10.

No. 232. ♂. Ujawaji, Jan. 26, 1898. Legs slate-colour; bill black; irides dark brown.

Agrees with Emin Pasha's specimens from Lado. I saw a few of these birds only in the above locality.

41. LANIUS ANTINORII Salvad.; Sharpe, P. Z. S. 1895, p. 477.

No. 132. ♂. Ujawaji, Dec. 10, 1897. Bill and feet black; irides brown.

No. 179. ♂. Jifa Medir, Jan. 6, 1898.

Common on the edge of the Bund or open country.

42. LANIUS POMERANUS Scop.

Nos. 198, 199. ♂. Makanis, Jan. 12, 1898. Legs and bill black; irides dark brown.

This is the first recorded occurrence of the Woodchat in Somaliland. I saw them only in the extreme west of the country.

43. LANIARIUS CRUENTUS (Ehr.); Sharpe, P. Z. S. 1895, p. 477.

No. 160. ♂. Jifa Medir, Dec. 30, 1897.
No. 188. ♂. „ „ Jan. 8, 1898.
Nos. 234, 235. ♂. Godgat, Jan. 27, 1898.
} Legs grey; bill black; irides brown.

This Bush-Shrike was very common all through Somaliland. It makes a great variety of calls and is a good ventriloquist. It can run very fast, and if one is winged it is almost impossible to catch it among the bushes.

44. Dryoscopus æthiopicus (Gm.); Sharpe, P. Z. S. 1895, p. 478.

No. 216. ♂. Jifa Uri, Jan. 21, 1898. Legs greenish slate-colour; bill black; irides dark brown.

No. 176. ♂. Jifa Medir, Jan. 5, 1898. Legs dark slate-colour; bill black; irides dark brown.

This bird inhabits the rocky hills. It has a beautiful bell-like note and is extremely shy.

45. Eurocephalus rueppelli Bp.; Sharpe, P. Z. S. 1895, p. 480.

No. 143. ♂. Ujawaji, Dec. 14, 1897. Feet and bill black; irides brown.

I saw several small flocks of this bird on the table-land, but it was not common.

46. Prionops cristatus Rüpp.; Sharpe, P. Z. S. 1895, p. 480.

No. 242. ♂. Ujawaji, Jan. 28, 1898. Legs red; bill black; irides and eyelids yellow.

This species was not very common. I saw them only when they came in to roost at night on the hills. They were very noisy and curious, and came quite close to me while I was watching them.

47. Nilaus minor Sharpe, P. Z. S. 1895, p. 479.

No. 122. ♂. Ujawaji, Dec. 8, 1897. Legs slate-colour; bill black; irides brown.

No. 178. ♀. Jifa Medir, Jan. 5, 1898. Legs and bill black; irides brown.

Not very common.

48. Sylvia blanfordi Seebohm; Lort Phillips, Ibis, 1898, p. 407.

No. 34. ♂. Mandeira, Nov. 9, 1897. Legs and bill dark; irides brown.

49. Sylvia subalpina Temm.; Seebohm, Cat. B. Brit. Mus. v. p. 27.

This species has not been before recorded from Somaliland.

50. Sylvia nana H. & E.; Lort Phillips, Ibis, 1898, p. 408.

Nos. 260, 261. ♀. Berbera, Feb. 11, 1898. Legs and bill pale; irides yellow.

51. Erythropygia leucoptera (Rüpp.); Sharpe, P. Z. S. 1895, p. 483.

No. 33. ♂. Mandeira, Nov. 9, 1897. Feet and bill dusky; irides brown.

No. 55. ♀. Godgat, Nov. 18, 1897. Legs and bill dark; irides brown.

No. 238. ♂. Godgat, Jan. 28, 1898. Feet brown; bill black; irides brown.

This species is common. It is a very lively little bird, and is very fond of showing itself off by running on the ground, and sitting on a twig with its tail and wings spread out.

52. Eremomela flavicrissalis Sharpe, P. Z. S. 1895, p. 481.

No. 139. ♀. Ujawaji, Dec. 10, 1897.
No. 197. ♀. Makanis, Jan. 12, 1898.
} Feet and bill black; irides light hazel.

No. 231. ♂. Ujawaji, Jan. 26, 1898. Legs and bill dark; irides light brown.

This species was common in Western Somaliland.

53. Sylviella isabellina Elliot, Field Columb. Mus. Orn. i. p. 44 (1897).

No. 111. ♂. Arabsiyo, Dec. 3, 1897. Feet brown; bill black; irides light brown.

54. Sylviella micrura (Rüpp.); Sharpe, P. Z. S. 1895, p. 482.

No. 92. ♂. Arabsiyo, Nov. 30, 1897. Feet brown; bill black; irides light brown.

55. Dryodromas smithii Sharpe; id. P. Z. S. 1895, p. 482.

Nos. 130, 131. ♂ ♀. Ujawaji, Dec. 9, 1897. Feet pale; bill dark; irides light brown.

This species goes in small families. It runs about on the ground among the bushes, and only takes short flights when disturbed.

56. Apalis viridiceps. (Plate II. fig. 1.)

Apalis viridiceps Hawker, Bull. Brit. Orn. Club, vii. p. lv.

Nos. 76, 77. ♂ ♀. Sheikh Wufli, Nov. 28, 1897. Feet brown; bill black; irides light hazel.

This little species is evidently closely allied to *Apalis flavocincta* (Sharpe), figured by Dr. Reichenow in his 'Vögel Deutsch. Ost-Afrika's' (p. 224, fig. 100), but it differs in having the head green instead of grey.

I procured only two specimens of the bird, and did not notice any others.

57. Cisticola terrestris (Smith); Sharpe, Cat. B. Brit. Mus. vii. p. 266 (1883).

No. 154. ♀. Ujawaji, Dec. 16, 1897. Feet pale; bill dusky; irides light brown.

Nos. 194–196. ♂. Makanis, Jan. 12, 1898. Feet and bill pale; irides light hazel.

These specimens agree with South-African examples of *C. terrestris*, and not with *C. hindii* Sharpe (Bull. Brit. Orn. Club, vi. p. vii) from Machakos.

I saw this species only west of Ujawaji.

58. Burnesia somalica Elliot, Field Columb. Mus. Orn. i. no. 2, p. 45 (1897).

No. 258. ♂. Berbera, Feb. 11, 1898. Feet pale; bill black; irides light hazel.

No. 271. ♂. Berbera, Feb. 22, 1898. Feet light brown; bill black; irides light hazel.

59. Calomonastes simplex (Cab.); Sharpe, P. Z. S. 1895, p. 482.

No. 45. ♂. Haragogara, Nov. 17, 1897. Feet and bill dark; irides light brown.

This species was rather common. It is a shy little bird and keeps under the bushes.

60. Monticola saxatilis (L.); Sharpe, P. Z. S. 1895, p. 485.

No. 223. ♂. Ujawaji, Jan. 24, 1898. Feet and bill black; irides brown.

I saw only two specimens of this bird.

61. Saxicola isabellina Rüpp.; Sharpe, P. Z. S. 1895, p. 485.

No. 26. ♂. Laferug, Nov. 8, 1897. Feet and bill black; irides brown.
No. 60. ♂. Daboloc, Nov. 25, „ „ „
No. 133. ♂. Ujawaji, Dec. 10, „ „ „
No. 146. ♀. „ Dec. 14, „ „ „

This seems to be the most widely distributed of the Chats in Northern Somaliland.

62. Saxicola deserti Temm.; Seebohm, Cat. B. Brit. Mus. v. p. 383 (1881).

No. 29. ♂. Laferug, Nov. 8, 1897. } Feet and bill black; irides brown.
No. 137. ♀. Ujawaji, Dec. 10, „ }

No. 246. ♂. Jan. 29, 1898. } Feet and bill black; irides dark brown.
No. 259. ♀. Berbera, Feb. 11, „ }

No. 267. ♂. „ Feb. 20, „ } Feet and bill black; irides brown.
No. 272. ♂. „ Feb. 22, „ }

63. Saxicola morio H. & E.; Seebohm, Cat. B. Brit. Mus. v. p. 372 (1881).

Nos. 75, 78. ♂. Sheikh Wufli, Nov. 28, 1897. Feet and bill black; irides dark brown.

No. 134. ♂. Ujawaji, Dec. 10, 1897.
No. 219. ♂. „ Jan. 24, 1898.

64. Myrmecocichla melanura (T.); Lort Phillips, Ibis, 1898, p. 413.

No. 44. ♂. Haragogara, Nov. 17, 1897. Bill and feet dark; irides brown.

65. Crateropus smithii Sharpe, P. Z. S. 1895, p. 487.

No. 215. ♂. Jifa Uri, Jan. 21, 1898. Feet dark slate-colour; bill black; irides light red.

I found this bird on the rocky hills. It went in families and was very noisy.

66. Argya aylmeri Shelley, Ibis, 1885, p. 404, pl. xi. fig. 1.

Nos. 244, 245. ♂ ♀. Daraweina, Jan. 29, 1898. Feet and bill horn-colour; irides pale yellow.

I saw only one small family of this species.

67. Pycnonotus arsinoe (H. & E.); Lort Phillips, Ibis, 1898, p. 413.

No. 144. ♂. Ujawaji, Dec. 14, 1897. Feet and bill black; irides brown.

Common all through Somaliland.

68. Bradyornis pumilus Sharpe, P. Z. S. 1895, p. 480.

No. 49. ♂. Haragogara. Nov. 17, 1897. Feet and bill black; irides brown.

Nos. 51, 52. ♂. Godgat, Nov. 18, 1897.

Nos. 56, 58. ♀. Daboloc, Nov. 22, 1897. Feet and bill dark; irides brown.

No. 79. Juv. Sheikh Wufli, Nov. 28, 1897. Feet and bill black; irides dark brown.

No. 120. ♂. Ujawaji, Dec. 8, 1897.

No. 227. ♂. „ Jan. 25, 1898. Feet and bill black; irides dark brown.

This is, perhaps, the commonest bird of all on the tableland. It is very tame and curious, and reminds one of the Robin (*Erithacus rubecula*) in its habits.

69. Pachyprora bella Elliot, Field Columb. Mus. Orn. no. 2, p. 47.

No. 225. ♂. Ujawaji, Jan. 25, 1898. Feet and bill black; irides yellow.

This species is common. It is very tame, coming round the camps and hunting for insects among the leaves of the acacias.

70. Pachyprora orientalis (Heugl.); Lort Phillips, Ibis, 1898, p. 414.

No. 57. ♂. Daboloc, Nov. 23, 1897. Feet and bill black; irides bright yellow.

71. Parisoma boehmi Reichen.; Sharpe, P. Z. S. 1895, p. 490.

Nos. 65, 69. ♂. Daboloc, Nov. 25, 1897. Irides pale yellow; feet black; upper mandible black, lower mandible horn.

No. 72. Sheikh Wufli, Nov. 28, 1897. Feet and bill dark; irides yellowish white.

No. 121. ♂. Ujawaji, Dec. 8, 1897.

No. 167. ♂. Jifa Medir, Jan. 1, 1898.

The habits of this bird are very similar to those of the Tits in the way it hunts for its food. It has a very pretty song, which it utters as it is feeding.

72. Dendropicus hemprichi (Ehr.); Sharpe, P. Z. S. 1895, p. 491.

No. 54. ♂. Godgat, Nov. 18, 1897. Feet slate-colour; irides dark red.

No. 64. ♂. Daboloc, Nov. 25, 1897. Feet and bill slate-colour; irides red.

This Woodpecker was rather common.

73. Iynx torquilla L.; Hargitt, Cat. B. Brit. Mus. xviii. p. 560 (1890).

No. 82. ♂. Arabsiyo, Nov. 29, 1897. Feet and bill greenish; irides light hazel.

The Wryneck has never before been recorded as a Somali bird, and its occurrence extends the winter range of the species somewhat to the southward.

I saw only two specimens of it.

74. Campothera nubica (Gm.); Sharpe, P. Z. S. 1895, p. 492.

No. 86. ♂. Arabsiyo, Nov. 29, 1897. Feet grey; bill black; irides red.

No. 172. ♀. Jifa Medir, Jan. 2, 1898. Feet and bill dark grey; irides red.

This Woodpecker is common from Laferug to the western border of Somaliland.

75. Barbatula minuta Bp.; Shelley, Cat. B. Brit. Mus. xix. p. 40 (1891).

No. 43. ♂. Haragogara, Nov. 16, 1897. Feet and bill dusky; irides brown.

No. 67. ♀. Daboloc, Nov. 25, 1897. Feet and bill black; irides brown.

These birds agree with Abyssinian specimens in the British Museum. I saw them generally on the Jub-trees in the watercourses.

76. Tricholæma blandi Lort Phillips, Bull. Brit. Orn. Club, vi. p. xlvii (1897); id. Ibis, 1898, p. 415, pl. ix. fig. 1.

My single specimen of this Barbet has unfortunately lost its label, and I cannot remember exactly where I shot it.

77. Coracias nævia Daud.; Sharpe, P. Z. S. 1895, p. 496.

No. 149. ♀. Jifa Medir, Dec. 19, 1897. Feet dirty yellow; bill black; irides brown.

No. 184. ♀. Jifa Medir, Jan. 8, 1898. Feet greenish; bill black; irides brown.

This Roller was not very common. I saw only a few specimens.

78. Lophoceros flavirostris (Rüpp.); Sharpe, P. Z. S. 1895, p. 499.

No. 221. ♀. Ujawaji, Jan. 24, 1898. Feet black; bill dark brown, yellow at the tip and on the edges; irides black; throat yellow.

I observed this species from Malgui, near the sea-coast, to Ujawaji.

79. Lophoceros medianus Sharpe; Lort Phillips, Ibis, 1898, p. 417.

No. 222. ♂. Ujawaji, Jan. 24, 1898. Feet black; bill reddish brown; irides brown; throat pink.

This species seems to be confined to the table-land.

80. Upupa epops L.; Salvin, Cat. B. Brit. Mus. xvi. p. 4 (1892).

No. 46. ♂. Haragogara. Nov. 17, 1897. Legs dark slate-colour; bill light at base; irides brown.

No. 229. ♂. Ujawaji, Jan. 26, 1898.

These specimens belong to the Common Hoopoe (*Upupa epops*), and not to the resident Somali form (*U. somaliensis*).

81. Irrisor erythrorhynchus (Lath.); Lort Phillips, Ibis, 1898, p. 417.

Nos. 90, 91. ♂ ♀. Arabsiyo, Nov. 30, 1897. Feet coral-red; bill black; irides dark brown.

No. 173. ♂. Jifa Medir, Jan. 2, 1898.

This bird is fairly common. It goes in flocks and is very noisy.

82. Rhinopomastes minor (Rüpp.); Sharpe, P. Z. S. 1897, p. 500.

No. 147. ♂. Ujawaji, Dec. 15, 1897. Feet black; bill orange; irides brown.

This Wood-Hoopoe is not very common. I saw it from Mandeira to Jifa Medir. It generally went in pairs.

83. Melittophagus cyanostictus Cab.; Sharpe, P. Z. S. 1895, p. 501.

No. 66. ♀. Daboloc, Nov. 25, 1897. Feet and bill black; irides red.

Nos. 239, 240. ♂ ♀. Godgat, Jan. 28, 1898. Feet and bill black; irides red.

I saw this little Bee-eater along the camel-track; it was very tame and hunted the insects disturbed by the passing caravans.

84. Halcyon chelicutensis (Stanl.); Sharpe, P. Z. S. 1895, p. 497.

No. 169. ♂. Jifa Medir, Jan. 2, 1898. Irides brown; feet reddish brown; upper mandible black, lower one red.

No. 247. ♀. Ujawaji, Jan. 29, 1898. Legs red-brown; bill dark; irides brown.

I saw only four single specimens of this Kingfisher, always a long way from water.

85. Colius macrurus (L.); Elliot, Field Columb. Mus. Orn. i. no. 2, p. 56 (1897).

No. 27. ♀. Laferug, Nov. 8, 1897. Feet red; base of bill red, tip black; irides red.

Nos. 87, ♂, 88, 89, ♀. Arabsiyo, Nov. 30, 1897.

I saw this bird at first on the Berbera plain; it goes in flocks, and its flight is quite straight. It utters a low whistle while flying. It was rather common about Gebili.

86. Carine spilogastra (Heugl.); Sharpe, P. Z. S. 1895, p. 504.

No. 37. ♀. Nov. 12, 1897. Bill and feet pale; irides pale yellow.

This little Owl is very common. It usually sits on the tops of the ant-hills, and generally seems very wide-awake.

87. Asio accipitrinus.

No. 203. ♀. Makanis, Jan. 13, 1898. Bill dark; irides bright yellow.

I saw only one individual of this species.

88. Glaucidium perlatum (V.); Sharpe, P. Z. S. 1895, p. 504.

No. 50. ♂. Haragogara, Nov. 17, 1897. Bill horn; irides pale yellow.

Not so common as the little *Carine*. It lives in the shady trees by day, and is not often seen.

89. Melierax gabar (Daud.); Sharpe, P. Z. S. 1895, p. 506.

No. 38. ♂. Mandeira, Nov. 12, 1897. Feet orange; bill slate-colour; irides brown.

90. Melierax niger (Gm.); Sharpe, P. Z. S. 1895, p. 506.

No. 151. ♂. Ujawaji, Dec. 16, 1897. Feet red; bill black; irides brown.

This was the only individual I saw of this species. It was hunting out on the plain when I first noticed it.

91. Strix flammea L.; Sharpe, Cat. B. Brit. Mus. ii. p. 291 (1875).

No. 213. ♀. Jifa Uri, Jan. 20, 1898. Bill light; irides dark brown.

I met with only one individual, which was in company with *Bubo abyssinicus* in a cleft in the hill. The Barn-Owl does not appear to have been before recorded from Somaliland.

92. Bubo cinerascens Guérin; Sharpe, Cat. B. Brit. Mus. ii. p. 32.

No. 218. ♂. Jifa Uri, Jan. 22, 1898. Bill black.

I found this specimen and an example of *Bubo abyssinicus* in the same cleft in the hill.

93. Bubo abyssinicus (Guérin); Sharpe, Bull. Brit. Orn. Club, vii. p. xxv (1898).

Nos. 212, 218. ♂ ♀. Jifa Uri, Jan. 22, 1898. Bill black; irides dark brown.

The male is a grey bird; the female is somewhat rufescent and agrees with the example obtained by Mr. Benett-Stanford and recorded by Dr. Sharpe, *l. c.* I shot them both from the same cleft in the hill at Jifa Uri, and they are probably male and female of the same pair. In the red phase the large white spots on the head and neck are very characteristic, and in the grey-plumaged male they are sufficiently distinct to distinguish it from *B. cinerascens*, and, but for the rufous phase, which does not seem to be present in *B. maculosus*, there is considerable resemblance in *B. abyssinicus* to some stages of the South-African bird.

94. Eutolmaetus spilogaster (Du Bus); Sharpe, P. Z. S. 1895, p. 508.

a. Ad. Daraweina, Feb. 1898.

I shot this bird from off its nest, which was built in a Jub-tree about 30 feet from the ground. There were two eggs in the nest.

95. Poliohierax semitorquatus (Smith); Sharpe, P. Z. S. 1895, p. 510.

No. 85. ♂. Arabsiyo, Nov. 29, 1897. Feet and cere orange-red; base of bill light blue, tip darker; irides dark brown.

No. 124. ♂. Ujawaji, Dec. 8, 1897.
No. 152. ♀. „ Dec. 16, 1897.
No. 214. ♀. Jifa Uri, Jan. 20, 1898.

This pretty little Falconet is not common. Its flight is more like that of a Thrush than that of a Bird of Prey.

96. Cerchneis cenchris (Naum.).

No. 204. ♂. Makanis, Jan. 13, 1898. Legs yellow; bill blue, the tip darker; irides dark brown.

I saw only a single individual of this little Kestrel.

97. Cerchneis fieldi Elliot, Field Columb. Mus. Orn. i. no. 2, p. 58.

No. 183. ♂. Jifa Medir, Jan. 6, 1898. Feet yellow; bill bluish slate-colour; irides pale yellow.

98. Trachelotis canicollis (Reichen.); Elliot, Field Columb. Mus. Orn. i. no. 2, p. 61.

No. 152. ♂. Ujawaji, Dec. 16, 1897. Feet yellowish white; base of bill light, the tip dark; irides brown.

No. 207. ♀. Jifa Medir, Jan. 19, 1898.

This Bustard is fairly common; it keeps among the bushes.

99. Lissotis hartlaubi (Heugl.); Sharpe, Cat. B. Brit. Mus. xxiii. p. 307 (1894).

Nos. 201, 202. ♂. Makanis, Jan. 13, 1898. Feet yellowish white; upper mandible dark on the top, with the sides light; lower mandible yellowish white; irides light brown.

This seems to be the least common of the Bustards in West Somaliland. I saw only two individuals, both of which I secured. When flying, its black breast and white wings make it very conspicuous.

100. Eupodotis kori (Burch.); Sharpe, Cat. B. Brit. Mus. xxiii. p. 324 (1894).

No. 150. ♂. Jifa Uri, Dec. 19, 1897. Feet yellowish white; upper mandible dark, the lower mandible white; irides yellow.

This bird was fairly common on the Bund or the open plain.

101. RHINOPTILUS HARTINGI Sharpe; id. P. Z. S. 1895, p. 513.

Nos. 35, 36. ♂. Mandeira, Nov. 9, 1897. Legs white; bill dark; irides brown.

Nos. 141, 142, ♂ ♀, 150, ♂. Ujawaji, Dec. 14, 1897.

This species is not very common. It is very tame, and allows one to approach within a few yards before taking wing.

102. STEPHANIBYX CORONATA (Gm.); Sharpe, P. Z. S. 1895, p. 514.

No. 127. ♀. Ujawaji, Dec. 8, 1897. Feet reddish pink; bill black, red at base; irides bright yellow.

This is a very noisy bird, and flies round anyone who disturbs it, uttering its irritating cry. The Somalis call it "Hedin-heito."

103. ÆGIALITIS HIATICOLA (L.); Sharpe, Cat. B. Brit. Mus. xxiv. p. 256 (1896).

Nos. 262, 263. ♂. Berbera, Feb. 17, 1898. Feet yellow; bill black; irides brown.

The Ringed Plover seems to be now recorded from Somaliland for the first time.

104. ÆGIALITIS CANTIANA (Lath.).

Æ. cantiana, Lort Phillips, Ibis, 1898, p. 422.

No. 264. ♂. Berbera, Feb. 17, 1898. Feet and bill black; irides brown.

No. 270. ♂. Berbera, Feb. 21, 1898.

105. TRINGOIDES HYPOLEUCUS (L.); Sharpe, P. Z. S. 1895, p. 515.

No. 269. Berbera, Feb. 21, 1898.

106. Tringa subarquata (Güld.).

No. 265. ♂. Berbera, Feb. 17, 1898. Feet and bill black; irides brown.

107. Sterna saundersi Hume; Saunders, Cat. B. Brit. Mus. xxv. p. 120 (1896).

No. 268. ♂. Berbera, Feb. 20, 1898. Feet yellow; bill dusky yellow; iris brown.

108. Œna capensis (L.); Sharpe, P. Z. S. 1895, p. 518.

No. 83. ♀. Arabsiyo, Nov. 29, 1897. Feet red; bill black; iris dark brown.

No. 126. ♂. Ujawaji, Dec. 8, 1897. Bill and feet red; iris brown.

109. Turtur damarensis F. & H.; Salvad. Cat. B. Brit. Mus. xxi. p. 426 (1893).

No. 128. ♂. Ujawaji, Dec. 9, 1897. Feet red; bill black; iris brown.

This is the most common Dove in Somaliland.

110. Francolinus kirki Hartl.; Lort Phillips, Ibis, 1898, p. 425.

Nos. 205, 206. ♂ ♀. Jifa Medir, Jan. 18, 1898. Bill black; feet reddish brown; iris brown.

This Francolin is very common in all the river-beds. It is a very game bird and rises well. Its flesh is excellent eating.

VII.—*Field-notes on Birds collected in the Philippine Islands in* 1893–6. By John Whitehead *.

I. Introduction.

On the 2nd of December, 1893, I began my first attempt at exploring the north of Luzon. In Manila I engaged two servants, one as collector, the other as cook. The first turned out utterly useless—the second was terribly lazy.

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* [The collections formed by Mr. Whitehead, to which the following field-notes refer, have all been fully described in previous numbers of

We went first to the base of Monte Arayat, where examples of many species of birds were collected. After this trial trip we returned to Manila and changed the "collector" for a "soldier." We left Manila again by steamer for San Fernando, and from that port rode over the mountains to La Trinadad, the cabecera of the province of Benguet, arriving there on the 31st of December.

In the highlands of Benguet the climate was perfect—bright sunshine all day followed by cold clear nights. I soon discovered that my soldier was no collector; he certainly killed birds, but as various limbs and parts of their little bodies were missing he was worse than useless. Thus for the first few weeks the whole work was necessarily done by myself. However, the mountains were so enticing, the country so lovely, and the climate so exhilarating, that I persevered and succeeded in obtaining a fine collection, in which there were examples of no less than 19 new species of birds.

On reaching Manila again both my servants had had enough of campaigning, and though one promised to come with me again he left me at the very last moment, and hid himself on the day of our departure. So I quitted Manila for the third time with three new servants. This time we steamed to Aparri on the north coast, and boated up the Rio Grande to a tobacco estate in the province of Isabella, at the foot of the eastern Cordillera of North Luzon. The journey from Manila to this place took us from the 21st of April to the 3rd of May. In a very few hours I discovered that my two new collectors were useless. After some days I myself was knocked up with dysentery, caused by the heat, damp, and want of fresh food; so the collection languished—in fact, was a failure. After several weeks spent in Isabella I sent my two "boys," with the baggage, down the Rio Grande

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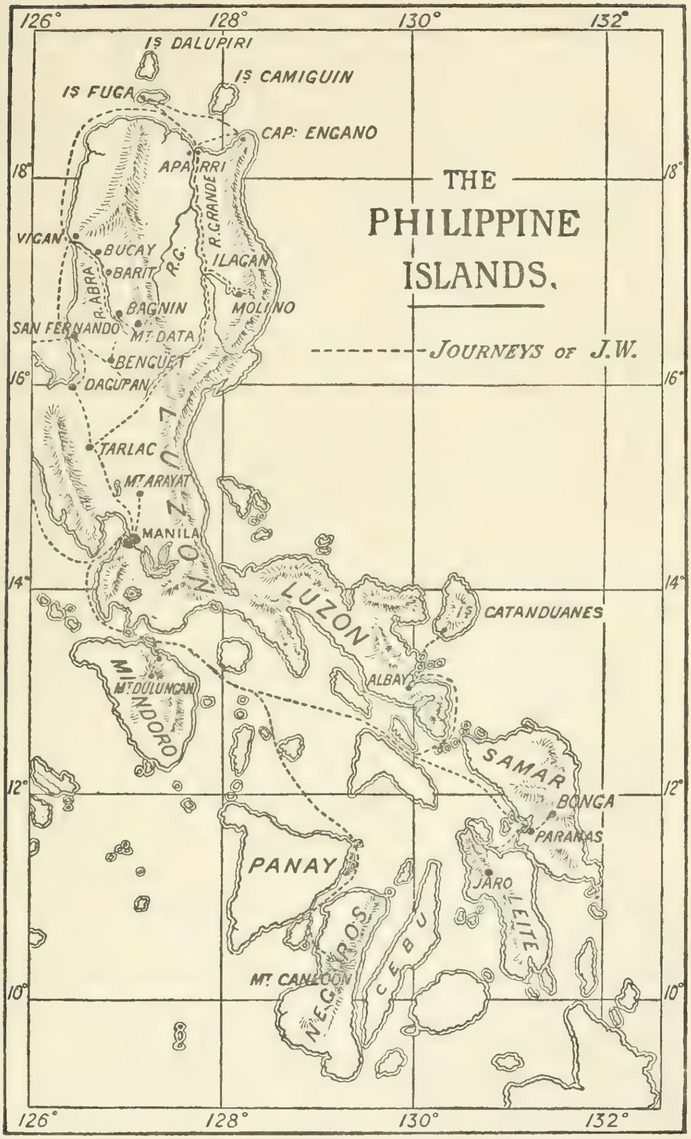
'The Ibis' by Mr. W. R. Ogilvie Grant. For Part i. of the series see Ibis, 1894, pp. 406–411; Part ii. *ibid.* pp. 501–522; Part iii. Ibis, 1895, pp. 106 117; Part iv. *ibid.* pp. 249–267; Part v. *ibid.* pp. 433–472; Part v Ibis, 1896, pp. 101–128; Part vii. *ibid.* pp. 457–477; Part viii *ibid.* pp. 525–565; Part ix. Ibis, 1897, pp. 209–250.—Edd.]


126°
128°
130°
132°
IS DALUPIRI
IS CAMIGUIN
IS FUGA
CAP: ENGANO
APARRI
18°
THE PHILIPPINE ISLANDS.
JOURNEYS OF J.W.
VIGAN
BUCAY
BARIT
R. ABRA
R.G.
R. GRANDE
ILAGAN
BAGNIN
MOLINO
SAN FERNANDO
MT DATA
BENGUET
DAGUPAN
16°
TARLAC
MT ARAYAT
MANILA
LUZON
14°
IS CATANDUANES
ALBAY
MINDORO
MT DULUNCAN
SAMAR
12°
BONGA
PARANAS
PANAY
JARO
LEITE
NEGROS
CEBU
MT CANLOON
10°

Outline Map of the Philippine Islands, to show Mr. Whitehead's routes, and the principal places at which collections were made.

and round by sea to Manila. I myself resolved to ride over the mountains, and in this way reached Manila again on the 28th of June.

One interesting discovery made during this journey was that the Manila Pine (*Pinus insularis*) does not grow on the Monte Caballo, which mountain divides the provinces of North and Central Luzon, so that the pine is probably confined to the great North-western Cordillera, and with it many of Luzon's most interesting birds.

In Manila I dismissed two of my servants and engaged two more—one of them a professional bird-skinner and collector. This time we went to Albay, on the south-east coast of Luzon, in order to avoid the rains, and we also visited the adjacent island of Catanduanes, of which the ornis was unknown. The island proved to be a part of Luzon. The Albay trip was only a partial success, owing to the time of year—it being the moulting-season.

On our return to Manila (on the 2nd of October, 1894), I at once began to prepare for an attack on the highest parts of the grand Cordillera, to the north of Benguet. On November 3rd I left Manila for Vigan, intending to work my way up the Abra River, and, as the weather became more settled, to explore the mountains of Lepanto. An interesting collection was made at Bucay, on the Abra River, where I remained some weeks. Thence began a weary tramp which lasted six days, through an absolutely treeless country. I was so ill with dysentery, and so depressed by the useless-looking landscape, that I nearly turned back, and declared that there was no forest in North Luzon. However, "every road has an ending," and one morning, while riding ahead of my baggage, on rounding a steep cliff, I came in sight of the oak- and pine-forests. We reached an Igorroti village the same afternoon, in which I resolved to stay. Here I remained several weeks, and from this village obtained my first view of Monte Data. This mountain projects in a westerly direction from the central range, is table-topped, and averages about 7500 feet in height, rising at the eastern end, as it joins the main range, to perhaps 9000 feet. The entire surface is well wooded with oak- and pine-forest. After a good deal of hard work we reached the summit of this interesting mountain on the morning of the 14th of January (1895) at 9 A.M.; and I was delighted to find the ground in shady places still covered with frost. On Data I remained camping out for thirty days, during which time the collections made were both large and remarkable for interesting mammals and birds—no less than five new genera of rodents having been discovered here.

We struck camp on the morning of the 13th February and gradually worked our way back over the same ground to Vigan—picking up the Bucay collection *en route*.

The next start was made for Aparri, on the north coast of Luzon, the idea being to reach the Cordillera of the east coast, but owing to the entire absence of porters this proved an impossible achievement. A boat was hired in Aparri to take us to Cape Engaño, but we were blown in the opposite direction, and on the following morning took refuge under Fuga Island, where a few birds were collected; the Cape was eventually reached in four days. Here also some new and interesting birds were met with, but the Negritos were useless as baggage-carriers, so that it was impossible to leave the coast.

After despatching the Engaño collection, a move was made on July 3rd to the island of Samar, where a good collection of birds was made, to be burnt later on on the 'Wieland' off Singapore.

On the next expedition we left Manila for Mindoro on the 20th October (1895), but the wet season spoilt all chance of success, although Monte Dulungan was ascended to a height of 4500 feet, and a camp formed. The rains were so persistent that collecting was almost impossible; still many interesting discoveries were made, and a number of the highland species of North Luzon were obtained.

After this, Negros was the next island visited, where a camp was formed on the Canloön volcano at over 6000 feet. Here also several new and interesting birds were obtained.

My last expedition in the Philippines was to Samar in order to replace the lost collection. This time I was fortunate in discovering the great Eagle *Pithecophaga jefferyi*, one of the most remarkable of all Philippine birds, so I was in some way compensated for the destruction of the first collection. On my return to Manila I heard that the rebellion —which was to change the fortune of Spain—had broken out. So, after vainly waiting two months to see whether politics would settle down again, I left for home once more on the 22nd October, 1896.

II. General Remarks.

As I visited only a small part of the Philippine Archipelago, I am unable to criticize the conclusions arrived at by Drs. Steere and Worcester, in their division of the Philippines into various groups, but it seems to me that Dr. Worcester's divisions, based on much larger material, are the more acceptable of the two. Most of my time was spent in North Luzon, which island had been practically neglected by ornithological collectors, except perhaps just in the vicinity of Manila.

Luzon—it is agreed by both the American naturalists—including the islands of Marinduque and Catanduanes, forms a province by itself. Mindoro forms a second province, and Samar and Leite with Bohol a third, while Negros, Panay, and Masbate make a fourth. As no other islands in other provinces were visited by me, it would be outside my work to discuss the other groups into which Drs. Steere and Worcester have divided the Philippines.

In the first province, Luzon, we find sufficient evidence in the lowlands to divide that island from Mindoro, but when we ascend the mountains we find nearly the entire ornis the same in the two islands, viz. :—

Muscicapula luzoniensis.
Cryptolopha nigrorum.
Stoparola nigrimentalis.
Brachypteryx poliogyna.
Hyloterpe albiventris.
Lanius validirostris.
Æthopyga flavipectus.
Zosterops aureiloris.
Chlorura brunneiventris.

The only two highland forms which differ and are represented in both islands are *Merula* and *Scops.*

The highlands of North-west Luzon have been, perhaps, as well explored as most parts of the Philippine Archipelago, while those of Mindoro have been only partially worked, and doubtless further exploration will only strengthen the connection with Luzon. Thus the conclusion arrived at is that if a separate province exists in the lowland ornis of Mindoro, it disappears in that of the highlands.

Luzon, Samar, Leite, and Mindanao are the most eastern of the larger Philippines and form a slightly interrupted chain of land, running almost due north and south. Of the highlands of the last three islands we know absolutely nothing. From Samar only one highland species, *Dicæum luzoniense,* is known, found at nearly 8000 feet in North-west Luzon; Samar, however, has no high mountains, and nothing of a highland ornis is to be expected from that island.

That land-connection existed at one time between these Eastern Philippines, including Bohol, and even Borneo, there can be little doubt. In Bohol, Samar, Leite, Mindanao, and Borneo are found two genera of mammalia, *Sciurus* and *Galeopithecus. Tarsius* occurs in Borneo, Samar, and Leite, and will no doubt hereafter be found in Mindanao. In Bohol it may have been exterminated with the forests, but probably still exists in that almost totally forest-cleared island. It is almost certain that these three Bornean genera do not occur in any other of the Philippine Islands; they are wanting in Luzon, the land-connection between that island and Northern Samar having been washed away before these mammals extended so far north. The results of this connection are, however, still visible in the Luzon ornis, as the following seven genera of birds are only found in the greater Eastern Philippines, viz.:—*Bubo, Irena, Poliolophus, Eudrepanis, Microstictus, Bolbopsittacus,* and *Harpactes.* These are met with from the North of Luzon to the South of Mindanao. Several of these are Bornean, and others, perhaps, are more nearly allied to Bornean genera than to the Philippines.

On the other hand, *Arachnothera, Ptilocichla, Macrornis,* and *Sarcophanops,* all closely-allied to Bornean genera and species, do not extend further north than Samar, and if *Zosterornis* be separable from *Dasycrotapha,* it may also be added to the first seven genera.

The Negros-Panay Province is a somewhat distinct one, the lowland and some of the highland forms differing considerably from those of Mindoro and the eastern islands, Luzon, Samar, and Mindanao.

I think that the only safe conclusions we can come to with regard to the Philippine ornis are:—(1) That the land-connection of these islands with Borneo extended over a very considerable period (long enough to allow the above-mentioned genera of mammals to extend their range as far north as Samar), and that the greater number of Philippine genera of birds found their way into the archipelago by this connection. Whether Celebes received or gave the few genera which it has in common with the Philippines is an open question. Celebes was, perhaps, the recipient island. (2) That a large number of genera came from the north, either by a land-communication with China which has now subsided below the China Sea; or, if this connection did not exist, by a line of direct communication between North Luzon and Formosa, most of which has subsided, leaving only the Batanes Islands as evidence of the past. (3) That Palawan has received all its genera from Borneo and the Philippines.

In concluding these remarks I may state that the total number of species of which specimens were collected by me in the Philippines amounts to 358. Of this number no less than 229 are peculiar to these islands; 66 are widely dispersed over India, Indo-China, Borneo, and Celebes; 61 are winter migrants from the north and do not affect questions of geographical distribution at all, and 2 species have been introduced by man.

III. FIELD-NOTES ON THE BIRDS.

a. ACCIPITRES.

1. CIRCUS SPILONOTUS Kaup. (Grant, Ibis, 1895, p. 437.)

A regular winter migrant to the Eastern Archipelago, but not so numerous in the Philippines as the next species.

2. CIRCUS MELANOLEUCUS (Forst.). (Grant, Ibis, 1895, p. 437.)

The Black-headed Harrier is not uncommon in districts where large grass-plains and open paddi-fields abound. In Luzon most of the country is of this nature, and this Harrier finds splendid hunting-grounds. I believe it is a resident species, as I have seen it late in the spring in North Luzon. That *C. philippensis* Steere, from Negros, is only the female of *C. melanoleucus* there can be little doubt, for I noticed a perfectly adult male of the latter within 30 yards of me in that island.

Iris straw-yellow; bill black, base of lower mandible dull lead-blue; cere dull yellow; legs orange-yellow.

3. CIRCUS ÆRUGINOSUS (Linn.). (Grant, Ibis, 1895, p. 438.)

The Marsh-Harrier is probably only a winter visitant to North Luzon, where it is not uncommon about the swampy rice-fields, in which it finds an abundance of snakes and frogs. Long before I obtained a specimen of this species I had seen stuffed examples of it in a Manila museum. My specimen was obtained on the 20th November, 1894.

4. ASTUR SOLOENSIS (Lath.). (Grant, Ibis, 1896, p. 104.)

The only specimen obtained by me was shot on the extreme north-east point of Luzon, when the northern migration was in full swing.

Iris hazel; cere orange; bill bluish at base, black at tip; feet king's yellow.

5. ASTUR TRIVIRGATUS (Temm.). (Grant, Ibis, 1897, p. 212.)

Met with only in Samar; though much of our time was spent in the island of Luzon, we failed to obtain this Goshawk there.

Iris king's yellow; cere and face dull greenish yellow; feet straw-yellow; bill black, base bluish.

6. Accipiter manillensis Meyen. (Grant, Ibis, 1895, p. 438; 1896, pp. 108, 109; 1897, p. 212.)

A species occasionally met with in forests at high elevations. We obtained specimens up in the mountains of Luzon as high as 8000 feet; one, a nearly adult male, was shot in Leite at 1000 feet; and in Mindoro one of these Sparrow-Hawks settled for a moment close to our camp, but was off again before I could reach my gun: this was at 4500 feet.

♀. Iris and orbital skin bright king's yellow; bill tipped with black, base dull blue; cere green; legs dull yellow.

7. Accipiter gularis (Temm. & Schleg.). (Grant, Ibis, 1896, pp. 104–109.)

A female of this little Sparrow-Hawk was obtained during our enforced stay on Fuga Island, where it was probably migrating northwards, the island at the time being full of migratory birds; this was in the middle of April, 1895.

♀. Iris pale straw-yellow; bill tipped with black, bluish at base; cere and legs pale king's yellow.

8. Pithecophaga jefferyi. (Grant, Ibis, 1897, pp. 214–220, pl. v. figs. 1–4.)

Of this remarkable bird we obtained a male specimen in the forests of Samar. This fine Eagle, one of the largest birds of prey inhabiting the Old World, is possibly allied to *Spilornis*, as well as to the Harpy Eagles of South America.

When in Benguet the natives told me that sometimes their small pigs were carried away by Eagles. This, I thought at the time, might be done by some of the northern species during their winter migration, little dreaming that such a fine bird as *Pithecophaga* remained unknown to the scientific world. During our first expedition to the island of Samar in July 1895, we made a fine collection of birds, all of which were burnt on board ship in Singapore. Great as was my loss, the capture of this fine bird compensated for it, as doubtless

I should not have gone again to Samar had my first collection reached its destination.

Returning to Samar in the month of May, 1896, we once more reached our old collecting-grounds and recommenced forming another collection of birds.

The forests that are left in Samar are still very vast, especially on the Pacific coast, but for miles inland those of the western coast have been destroyed, leaving ranges of low undulating clay hills, chiefly covered with lalang grass. When this country has been passed the traveller finds himself at an elevation of nearly 1000 feet and meets with the true virgin forest of Samar. This forest is becoming annually smaller owing to the cultivation of hemp on suitable soils. Fortunately, however, much of this country is covered with rough, sharp blocks of limestone, which is unsuitable for planting. The trees in these forests are often very high, some quite 200 feet; but I have seen forest-trees higher than these at the foot of Canloön volcano, in Negros. In these lofty forests the Great Philippine Eagle has made his home, with no enemies to trouble him. He is well known to the natives as a robber of their poultry and small pigs, but chiefly as a destroyer of monkeys, which are the only animals sufficiently abundant in these forests to support such a large bird. We had noticed on more than one occasion this large Eagle flying along the edge of the forest and had heard its peculiar plaintive cry, "*w-aū waū*," still more often, but as week after week passed there seemed little likelihood that we should secure a specimen. One morning, however, my servant Juan returned with this huge bird, which he shot with an old muzzle-loader, luckily putting one buckshot into its neck. The Eagle fastened its talons round the branch in its death-grip and hung firmly fixed near the top of the tree. Juan, after firing several other shots, which failed to move it, sooner than lose the bird, climbed the tree and secured the prize. When he handed it over to me it was so heavy that I could hardly hold it out at arm's length in my then enfeebled state of health. I should guess its weight to have been between 15 and 20 lbs.

This Eagle will doubtless occur in other islands, perhaps Luzon. Dr. Worcester gives it in his list as probably occurring in Mindanao, which of course it is nearly certain to do. I believe that it also inhabits the forests in Leite, which island is practically a part of Samar. I requested Mr. Grant to name this bird after my father, Mr. Jeffery Whitehead, by whose generous aid both this and my Bornean expedition have been carried out.

9. Lophotriorchis kieneri (Geoffr. St.-Hil.). (Grant, Ibis, 1895, p. 438.)

Only an immature example of this small Eagle was shot by us on our journey to Lepanto. The bird fell down a cliff, and I warned my servant to be careful how he secured it, as it was only winged. The boy returned shortly, livid with pain, the hind talon of the Eagle being firmly fixed in the palm of his hand. It took some time before I could kill the bird and release him. In Isabella (North Luzon), where large flocks of two species of *Carpophaga* were often feeding on the forest-fruits, I several times saw this small Eagle attempt to capture the pigeons, which, however, took good care to keep out of harm's way among the branches.

Juv. Iris dark brown; bill black; cere pale yellow; feet lemon-yellow.

10. Spizaëtus philippensis (Gurney). (Grant, Ibis, 1894, p. 503; 1896, p. 110.)

Scarce in the Philippines, only two specimens having been obtained by us in three years, one on the sea-coast, the other in the Benguet highlands at 4000 feet. I saw another on the plains which border the Rio Grande in North Luzon.

Iris bright yellow; bill black; feet pale yellow.

11. Spilornis holospilus (Vigors). (Grant, Ibis, 1894, pp. 407, 503; 1895, p. 251; 1896, pp. 110, 528; 1897, p. 212.)

This richly-coloured Serpent-Eagle is fairly common in Luzon, especially where the country is open enough to suit its habits. In large forests these Eagles have no chance of watching their prey, so they are always found frequenting open plains and bare mountain-sides, but more especially partially dried-up river-courses, in which, as a rule, reptiles are abundant. In the highlands of North Luzon, where the mountains are mostly bare of forest, as many as five of these Eagles may be noticed at a time, soaring in wide circles high in the heavens, every now and then uttering their plaintive cry. We met with this species also in Samar.

12. SPILORNIS PANAYENSIS Steere. (Grant, Ibis, 1896, p. 527.)

There can be little doubt that this species is quite distinct from *S. holospilus*, being decidedly smaller and of a much paler colour. In habits it is similar to *S. holospilus*, and in Negros and Panay, the country having been almost stripped of forest for the cultivation of sugar, it finds a home suitable to its requirements.

Iris bright yellow; bill tip black, bluish at base; cere yellowish green; feet dull straw-yellow.

13. BUTASTUR INDICUS (Gm.). (Grant, Ibis, 1894, p. 503; 1895, p. 438.)

Common during the winter months in North Luzon. In Fuga Island, on 15th April, I met with this species in full migration, as many as ten being observed on the wing at a time, all making the journey northwards.

14. HALIAËTUS LEUCOGASTER (Gm.). (Sharpe, B. M. C. i. p. 307.)

The White-bellied Sea-Eagle is not uncommon on the coasts of the Philippine Islands. In the island of Fuga we found a nest near an old Spanish fort, from which the Eagle rose; but on examining the nest it contained no eggs, though the Eagles had re-lined it with green branches. In the same tree we took a nest of *Oriolus chinensis* containing three eggs. This Sea-Eagle is also common on the coast of Samar, where it might often be seen perched on the fishing-stakes.

15. Haliastur intermedius Gurney. (Grant, Ibis, 1894, p. 407; 1895, pp. 251, 438.)

This is the most abundant of Philippine Raptores, especially in the vicinity of large towns and villages. In the native villages it is very amusing to watch the hens with their broods. After having finished prospecting for food under a house, a move is necessary; the hen first goes out and casts her eye heavenwards in search of the enemy (*H. intermedius*). If all is clear she covers the intervening distance to the next house at full speed, making as much fuss and alarming her young as much as possible until they are again safe under cover.

This Kite soon found our camp on Monte Data, and was almost a daily visitor.

16. Elanus hypoleucus Gould. (Grant, Ibis, 1896, p. 462.)

Seen once or twice in the open districts in North Luzon, and obtained by us in the islands of Samar and Mindoro, but the species is by no means common.

Iris scarlet-lake; bill black; cere, gape, and feet pale lemon-yellow.

17. Pernis cristatus Cuv. (Grant, Ibis, 1897, p. 213.)

Pernis ptilonorhynchus (Temm.). (Grant, Ibis, 1894, p. 503; 1895, pp. 108, 251.)

Occasionally met with in the forests of Luzon and Samar. This species, like most tropical Raptores, prefers the more open parts of the forests.

Iris light straw-yellow; bill black, bluish at base; feet dull yellow.

18. Microhierax erythrogenys (Vigors). (Grant, Ibis, 1894, p. 503; 1895, p. 438.)

Fairly common in Luzon, especially in the neighbourhood of old forest-clearings, where a few large isolated tree-trunks have been left standing. In such a locality I once noticed a pair of these little Falcons feeding their young in a hole high up on the side of one of these trees. Though this species, like many tropical birds, is most active at sunrise and sunset, it cannot, I think, be said to be crepuscular.

19. MICROHIERAX MERIDIONALIS. (Grant, Ibis, 1897, p. 220.)

We met with this species of *Microhierax* in Samar, where it frequented old native clearings and the edges of forest, like the preceding species.

20. FALCO PEREGRINUS Tunst.

This is a regular winter migrant to the Philippines. During a few hours spent on Fuga Island (on the 14th April, 1895) a Peregrine flew along the beach within a few yards of me; it was then on its way north to China, the Batanes Islands forming convenient stepping-stones to the great Asiatic continent. I also noticed a Peregrine in the island of Catanduanes in the month of October.

This species is a common winter migrant to Borneo and other islands in the Malay Archipelago, and has been obtained in several of the Philippine Islands.

21. FALCO ERNESTI Sharpe. (Grant, Ibis, 1898, p. 435.)

This beautiful Peregrine is no doubt a resident species in the Philippines, nesting in suitable cliffs, of which there are an abundance in several of the islands, more especially in North Luzon. I found the eyry of a pair in Negros containing young (see Ibis, 1896, pp. 529, 530). In North Luzon we obtained a beautiful specimen of a fully adult male on the summit of Monte Data.

Iris dark brown; feet, orbital skin, and cere bright king's yellow; bill black at tip, base bluish.

22. FALCO SEVERUS (Horsf.). (Grant, Ibis, 1895, p. 439; 1896, p. 529.)

This little Hobby is seldom met with by the traveller. I saw one flying over the mountains at a great height in Benguet, and obtained a perfect specimen of a male at over 7000 feet in Lepanto. A female shot on Canloön volcano, in Negros, was evidently sitting, her breast being quite bare.

This species frequents the more open places near large forests, where it is generally seen on the wing.

Iris dark brown; cere, orbital skin, and feet bright king's yellow.

23. FALCO TINNUNCULUS Linn. (Grant, Ibis, 1895, p. 439.)

The Kestrel is often noticed hovering over the treeless grass-covered hill-sides in North Luzon during the winter months; but it is a difficult bird to secure, owing to the vast open distances, which afford no cover at all to the hunter. This species had not been met with before in the Philippine group. I saw several Kestrels near the Abra River on the 8th November.

24. PANDION HALIAËTUS Linn.

Though observed several times on the large rivers of Luzon and Mindoro, we did not obtain a specimen of the Osprey.

25. POLIOAËTUS ICHTHYAËTUS (Horsf.). (Grant, Ibis, 1897, p. 222).

This Fish-Eagle generally frequents lagoons and river estuaries in the vicinity of the sea-coast. In Samar, however, we obtained a pair up in the hills, which were fishing in a clear stream running over limestone rocks. Though this Eagle has not yet been recorded from Luzon, I saw it several times in the mangrove-swamps of Cape Engaño.

b. STRIGES.

26. BUBO PHILIPPINENSIS (Gray). (Grant, Ibis, 1894, p. 503.)

This large Owl reminds one very much of *Ketupa javanensis*, the Malayan Fish-Owl, but the tarsus is bare of real feathers in *Ketupa* and well feathered in *Bubo*. I am very much inclined to think that this *Bubo*, which seems partial to rivers and lakes, will be found to obtain some of its food in them.

I met with three of these Owls in Benguet, in a river-course which they frequented, for several nights before we shot a pair, and I saw another in the Province of Isabella, close to a large river.

Mr. Everett, I believe, also obtained this Owl on the Laguna de Bay, a large lake to the S.E. of Manila.

Iris bright yellow; bill dull bluish white; feet pinkish brown.

27. Scops whiteheadi. (Grant, Ibis, 1895, p. 440.)

On several occasions during my first visit to Benguet I heard a most peculiar and powerful cry shortly after nightfall. The natives of the district (as is usual when they hear nocturnal noises) declared it was the devil. The cry is best written *oik-oik-oik-oōk,* with an interval between each *oik,* and the *oōk* a well drawn out sound.

It was not until the following year, when camped out on Monte Data, that I again heard this same peculiar cry, and after waiting about for several evenings in open parts of the forest we were fortunate in securing our first specimen of this fine Scops Owl, which is the largest representative of the genus in the Old World.

We secured three more specimens during five weeks spent on the mountain, and on our descent to the Igorroti village at the foot of the mountain a native brought me a female with a nestling just hatched; this was on the 14th of February. This Scops is probably confined to the mountain-regions of North Luzon, as we did not hear it again after leaving Lepanto.

Iris golden brown; bill brownish white, tipped with white; feet dull white, nails white.

28. Scops longicornis. (Grant, Ibis, 1894, p. 504.)

When returning home at sunset after one of my long excursions in the mountains of Benguet, I was attracted into the dark pine-forest by a peculiar whistling note, which may be written *qūop,* and resembles that of the European Scops (*S. giu*). As I was then living more than five miles from the forest in which I heard the Owl, I moved to an Igorroti village surrounded by pine-forest.

For some nights, although we succeeded in getting under the trees in which the Owls were calling, it was quite impossible to see the birds; but one evening a bird commenced calling just before sunset, and I was fortunately close to the spot. It presently flew from the tree and settled in the open, where it was an easy shot.

I was not fortunate in securing further specimens during this expedition, although I was several times within a few yards of the birds. During daytime these Owls roost in the thick fern and grass-tangles near the ground, where it is quite impossible to see them. We heard this Owl again the following year once or twice on the summit of Monte Data, and obtained another specimen.

Iris bright yellow; bill blackish; feet pinkish brown.

29. SCOPS MINDORENSIS, sp. nov.

Scops sp. Grant, Ibis, 1896, p. 462.

During a lengthened expedition to the highlands of Mindoro—which was, most unfortunately, in the wet season—one of my hunters shot a small Scops Owl. The bird was much destroyed, having been fired at within five yards, and one side of the breast was blown away.

In 'The Ibis,' October 1896, p. 462, Mr. Grant gave several reasons for the Mindoro Scops being specifically distinct from *S. longicornis* of Luzon, but declined to describe it. The Mindoro specimen is an adult female: the ovary contained well-developed eggs. The white in the Luzon birds is replaced by pale buff; the bristles at the sides of the mandible are much shorter, also the ear-tufts. The size is much smaller than that of the Luzon males, instead of considerably larger, as is the rule in females of this genus.

Scops longicornis, ♂. Total length 8·0 inches, wing 5·6, tail 2·9, tarsus 1·15.

Scops mindorensis, ♀. Total length 7·2 inches, wing 5·3, tail 2·5, tarsus 1·15.

In *Scops whiteheadi* the female is much larger than the male:—

♂. Total length 9·5 to 10 inches, wing 7·3 to 7·4, tail 3·6 to 3·7, tarsus 1·65.

♀. Total length 11 to 11·4 inches, wing 7·7 to 8, tail 3·9 to 4, tarsus 1·65 to 1·9.

Thus I think there can be little doubt that the Mindoro Scops is not the female of *S. longicornis,* but is a new species, for which I propose the name of *Scops mindorensis.*

30. NINOX JAPONICA (Temm. & Schl.). (Grant, Ibis, 1896, pp. 111, 463.)

Met with in Mindoro on 24th October, and in Fuga Island on 15th April. This species is a winter migrant to the Philippines.

Iris king's yellow; bill greenish brown; cere dull olive-green; feet dull yellow.

31. NINOX PHILIPPENSIS Bonap. (Grant, Ibis, 1895, p. 441; 1896, p. 110.)

These peculiar little Owls are more often met with during the day than Scops Owls, from their habit of being much more easily flushed. A Scops Owl does not move until nearly touched, but *Ninox* nearly always leaves its roost if approached within a few yards. *Ninox* also frequents much more open country at night, often coming close to the villages, where it makes a considerable noise during the whole night if it be clear moonlight, one of my "boys" having shot as many as three one evening close to our house.

Iris straw-yellow; cere dull yellowish green; legs pale yellow, with a slight greenish tinge.

32. NINOX MINDORENSIS. (Grant, Ibis, 1896, p. 463.)

Obtained in the lowlands about the base of Monte Dulungan in Mindoro; and but for the incessant rains I might have obtained more specimens. It seems strange that Mindoro should possess two Hawk-Owls peculiar to the Philippines, *N. spilonotus* having been described from Cebu, and also met with in Mindoro by Messrs. Bourns and Worcester. One of the natives of Mindoro called this bird the "Bucali," and told me that it always accompanied wild pigs.

33. STRIX CANDIDA Tickell.

Fairly common in Luzon, and often obtained in the vicinity of Manila, from which locality I purchased a specimen. I saw this bird near the base of Monte Arayat, and found a wing-feather on one of the mountain-paths in Lepanto.

c. PASSERES (Part I.).

34. CORVUS PHILIPPINUS Bonap. (Grant, Ibis, 1894, p. 504; 1895, p. 252; 1896, p. 531.)

Common round about the native villages, where the country is sufficiently open. In the Igorroti villages of North Luzon these Crows are very tame, perching on the houses in numbers. I have counted as many as 27 together. In Negros they were often a great nuisance, following one in the low jungles in small flocks, and making enough noise to alarm the birds for some distance round. I was sometimes so annoyed that I murdered one and left his friends to hold a post-mortem, giving me a chance to get away from their noise. In Catanduanes we obtained a perfect albino.

Iris, bill, and feet black.

35. CORVUS PUSILLUS Tweedd. (Grant, Ibis, 1896, p. 463.)

Common in Mindoro, chiefly frequenting the forests, as in Palawan. This little Crow is easily distinguished from the preceding species by its different note, though sometimes both species may be seen on the same tree in the neighbourhood of native houses.

Iris, bill, and feet black.

36. ORIOLUS CHINENSIS Linn. (Grant, Ibis, 1894, p. 407; 1895, pp. 108, 252; 1896, pp. 111, 463, 532; 1897, p. 222.)

Common in all islands visited by us, frequenting the vicinity of native plantations. In Luzon we found several nests, often close to the native villages.

37. ORIOLUS SAMARENSIS Steere. (Grant, Ibis, 1896, p. 533; 1897, p. 223.)

This and the following three species are small forest-loving Orioles, closely allied to the well-known *O. xanthonotus* of the greater Malay Islands.

We found some difficulty in obtaining specimens of the

Samar birds, owing to the great height of the trees which they frequented.

Ad. Iris red; bill dull pinkish brown; feet blackish grey.
Jr. „ grey; „ „ „ „

38. Oriolus steerii Sharpe. (Grant, Ibis, 1896, p. 532.)

We found this species at the base of Canloön volcano, where, like the previous species, it was difficult to obtain owing to the great height of the forest.

Iris lake-red; bill dull reddish brown; feet greyish blue, soles yellow.

39. Oriolus isabellæ. (Grant, Ibis, 1895, p. 108.)

The only specimen obtained was shot in the thick bamboo-forests of Isabella, a province of Central North Luzon. Owing to an attack of dysentery during this expedition the writer was unable to do much collecting, or doubtless other specimens might have been collected.

Iris brown; bill dark brown; legs lead-blue.

40. Oriolus albiloris. (Grant, Ibis, 1894, p. 504.)

The unique specimen obtained was shot in the Benguet mountains at an altitude of 2000 feet. It is apparently rare, like most of the small forest Orioles in the Philippines.

Iris lake; bill brownish pink; feet dull lead-blue.

41. Dicrurus balicassius (Linn.). (Grant, Ibis, 1895, p. 441; 1896, p. 111.)

This Drongo is fairly common in the forests of Luzon and Mindoro; it has a beautiful liquid note and is a great mimic. In Mindoro I have heard a Drongo imitating the small Crows so perfectly that I could hardly tell which of the birds were "cawing."

Iris dark brown; bill and feet black.

42. Dicrurus mirabilis Walden & Layard. (Grant, Ibis, 1896, p. 534.)

One of the most charming members of a beautiful genus. Fairly common in Negros, frequenting both forest and neglected clearings. This species is also a great mimic, and I have heard it imitate the curious whistle of *Pitta atricapilla.*

I once saw a *Carpophaga* settle by mistake in a small tree in which a pair of Drongos had their nest; both birds at once attacked the Pigeon, and drove it away, leaving several bunches of feathers floating in the air.

Iris dark brown; bill and feet black.

43. Dicrurus striatus Tweedd. (Grant, Ibis, 1897, p. 223.)

A smaller species, which is fairly common in the forests of Samar and Leite.

Iris dark brown; bill and feet black.

44. Artamides mindorensis Steere. (Grant, Ibis, 1896, pp. 463, 535.)

Somewhat rare in Mindoro at 4500 feet.

Iris pale straw-yellow; bill and feet black. The tongue was black in the male, but yellow in the female.

45. Artamides kochi (Kutter).

Artamides mindanensis Steere. (Grant, Ibis, 1897, p. 224.)

Fairly common in Samar and Leite.

46. Artamides striatus (Bodd.). (Grant, Ibis, 1894, pp. 408, 505.)

Common in Luzon, where it frequents both forest and open clearings, in which high trunks have been left standing. This Graucalus is often seen flying from the top of some high tree in small parties of four or five, when it makes a good deal of noise. We met with it as high as 7000 feet in the highlands of North Luzon.

47. Artamides panayensis Steere. (Grant, Ibis, 1896, p. 534.)

This was obtained in Negros.

♀. Iris lake-brown; bill and feet black.

48. Edoliisoma cærulescens (Blyth). (Grant, Ibis, 1894, p. 505; 1895, p. 441.)

Fairly common among the lower valleys of North Luzon up to an altitude of 2000 feet. In habits this genus is closely allied to *Artamides*; both genera make a good deal of noise on the wing and frequent the topmost branches of high trees, though occasionally they are met with in old forest-clearings.

49. Edoliisoma panayense Steere. (Grant, Ibis, 1896, p. 537.)

This species we met with in Negros; it is a more lively and noisy bird than *E. cærulescens*.

Iris, bill, feet, tongue, and inside of mouth black.

50. Pericrocotus cinereus Lafr. (Grant, Ibis, 1894, pp. 408, 505; 1895, p. 441.)

A Chinese winter migrant, dispersed probably over the entire Philippine group, though it has hitherto been recorded only from Luzon and Mindoro.

51. Pericrocotus leytensis (Steere). (Grant, Ibis, 1897, p. 224.)

Scarce and difficult to obtain, frequenting the highest branches of the forest-trees.

52. Pericrocotus novus Wardlaw-Ramsay. (Grant, Ibis, 1895, p. 252; 1896, p. 539.)

Rare in all localities visited by us in Luzon, only three specimens having been met with during many months spent in that island. A male specimen obtained in Negros is apparently of this species.

Iris dark brown; bill and feet black.

53. Lalage melanoleuca (Blyth). (Grant, Ibis, 1895, p. 252.)

Fairly common in South Luzon. This and the next species are more commonly found in or on the edges of the forest, while *Lalage terat* loves the haunts of man and is generally found frequenting old gardens and plantations in and about native villages.

54. Lalage minor Steere. (Grant, Ibis, 1897, p. 223.)

Scarce in Samar and Leite.

Iris and bill black; feet greyish black.

55. LALAGE TERAT (Bodd.). (Sharpe, B. M. C. iii. p. 95.)

This bird is widely distributed throughout the archipelago and in many other of the large Malay Islands.

56. MUSCICAPA GRISEISTICTA (Swinhoe). (Grant, Ibis, 1894, p. 408; 1895, pp. 252, 441; 1896, p. 540.)

Fairly common during the winter months, and found distributed over the whole archipelago.

57. PRATINCOLA CAPRATA (Linn.). (Grant, Ibis, 1894, p. 505; 1895, p. 441.)

Common in Luzon where the country is sufficiently open. In the highlands of Benguet it was plentiful on the bare hillsides at 5000 feet. This Chat has been met with in most of the larger Philippine Islands, except the Samar-Mindanao Province; it has also an extended range over the Malay Archipelago.

58. MUSCICAPULA MACULATA Tickell.

M. westermanni Grant, Ibis, 1894, p. 506; 1895, p. 442; 1896, p. 540.

This most elegant little Flycatcher has of late years—since the highlands of the Eastern Archipelago began to be explored—been found to have a very wide distribution. It occurs in all the large Malay Islands, has lately been met with in Celebes, and is now recorded from two of the Philippine Islands—Luzon and Negros. I did not meet with it in Mindoro, but doubtless it will also occur in that island.

The exact similarity of specimens from all these widely-separated islands is the more remarkable when we consider that the species is an isolated highlander, and that all other species associated with it offer slight or strong differences in plumage in almost every island we touch at. The great differences between the various *Merulæ*, *Brachypteryges*, and many other highland forms would lead one to expect a slight change at least in this species. But no! there he is, always the same immaculate little bird; always rather pleased to see you; quite tame, and often frequenting the vicinity of your camp. On Monte Data we had a pair always about our camp, and on those clear frosty mornings, just as the sun coloured the eastern sky, our little *Muscicapula* used to sing his pretty song, and with that song we commenced our daily work. Things went well with our little birds (as I would not allow them to be molested), until one day another male *Muscicapula* turned up. This quite upset my friend, and he fought many a battle under the shady pine-trees; but his rival stayed on just the same. The hen Flycatcher seemed rather to enjoy the fun and flirted about with the new-comer, and when we struck camp and retired from Monte Data the dispute was far from being arranged; both the cocks were sparring on and off all day, swelling out their little bodies until they resembled miniature puff-balls, and no doubt hating each other as only rivals can.

59. MUSCICAPULA SAMARENSIS B. & W. (Grant, Ibis, 1897, p. 226.)

Obtained by us both in Samar and Leite. This species is both scarce and difficult to obtain, as it frequents thick dark forests, spending its time in the tangled undergrowth, and it is therefore seldom seen. The female has a somewhat remarkable departure in coloration from the rest of the genus, bearing only a slight resemblance to the male in the underparts, while the rusty-brown plumage of the back and the absence of the superciliary stripes would lead one to put it even in a different genus.

Iris and bill black; feet bluish white.

60. MUSCICAPULA LUZONIENSIS. (Grant, Ibis, 1894, p. 505; 1895, p. 463.)

We found this Flycatcher rare in Benguet, but commoner at the higher altitudes in Lepanto. This species is the representative form of *M. hyperythra* of Borneo, but the birds differ much in habits. On Kina Balu this little Flycatcher is always to be seen sitting about in open places, hawking. It flies from some bare branch and returns to its perch after each short flight, and there would be no difficulty in securing specimens. In Luzon and Mindoro, however, *Muscicapula* frequented the thick tangled undergrowth near the ground, and was most difficult to obtain. This species becomes much more active towards sunset, when it often utters a peculiar hissing note, written best "*pust.*" In Luzon we met with it up to 8000 feet, and in Mindoro at 4500 feet.

Iris dark brown; bill black; feet bluish white.

61. MUSCICAPULA NIGRORUM Whitehead.

Muscicapula luzoniensis Grant, Ibis, 1896, p. 540.

This species is closely allied to *M. luzoniensis*, but the female is greyish blue on the back instead of brown. The male is also generally richer in colour, both on breast and back. We met with this Flycatcher on Canloön volcano at 6000 feet, in Central Negros. In its habits it is precisely similar to the preceding species, and it is as difficult to obtain as are some of the most creeping Warblers.

Iris dark brown; bill black; feet bluish white.

62. HYPOTHYMIS AZUREA (Bodd.). (Grant, Ibis, 1894, pp. 408, 506; 1896, pp. 111, 464, 540; 1897, p. 224.)

A widely-distributed species, found throughout the archipelago, frequenting old forest, often at considerable elevations, being met with by us at over 4000 feet in Mindoro.

63. CYANOMYIAS HELENÆ Steere.

This seems to be a very rare bird. On our first visit to Samar we secured one specimen, a female, which was destroyed with the rest of the collection, and during three months spent in Samar in the following year this species was not again obtained.

64. RHIPIDURA NIGRITORQUIS Vigors. (Grant, Ibis, 1895, p. 252.)

This species is the only true member of the genus *Rhipidura* found in the Philippines, the next three species differing in the form of the tail and in being quite different in their mode of coloration. *R. nigritorquis*, like *R. javanica*, is seldom met with far from the coast, and is generally a frequenter of nippa, mangrove, and sago swamps, while the other Philippine species frequent thick inland forests, often up to high altitudes. *R. nigritorquis* has been met with in all the larger Philippine Islands, and extends its range into Palawan, but in Borneo its place is taken by *R. javanica*, a bird of similar habits.

65. **Rhipidura cyaniceps** (Cassin). (Grant, Ibis, 1894, p. 506; 1895, p. 252.)

This pretty Flycatcher is common in the forests of Luzon from the sea-coast up to nearly 8000 feet. In the pine-forests of Benguet it was always to be found mixing with the hunting-parties made up of nearly a dozen species of insectivorous birds. It frequented the higher branches of the trees, among which it made short flights after insects.

I was fortunate in finding a nest containing two eggs on April 29th at Cape Engaño. The small cup-shaped nest was built on to a dead branch which had fallen across a pathway in a most exposed position, but doubtless a safer one than if it had been among the foliage, where insect-pests swarm.

66. **Rhipidura albiventris** Sharpe. (Grant, Ibis, 1896, p. 540.)

This Flycatcher was fairly common amongst the high trees at the base of Canloön volcano. In habits it resembles the preceding species.

Iris dark brown; bill and feet black.

67. **Rhipidura samarensis** (Steere).

Hypothymis samarensis Steere. (Grant, Ibis, 1897, p. 225.)

With all due deference to the opinions of Dr. Sharpe and Prof. Steere, who put *R. superciliaris* and this species in the genus *Hypothymis*, I consider that both of them belong to *Rhipidura*, but are slightly aberrant forms, like *R. cyaniceps* and *R. albiventris*.

In 'The Ibis,' 1897, p. 225, Mr. Grant supports Prof. Steere's opinion, and says, "*Rhipidura* has the tail rounded, the outer feathers being much shorter than the middle pair." These differences of length in the tail-feathers occur only in a certain section of the genus, which is represented in the Philippines by *R. nigritorquis*, but all the forest *Rhipiduræ* of these islands, and even *R. perlata* of Borneo, have the tail-feathers graduated in length like *R. samarensis*.

The feathers on the head are also quite distinct from those of *Hypothymis* and like those of *Rhipidura.* The sexes in this species have the same coloration, while they differ in *Hypothymis.* The bill is hard and black, not soft and bright blue, and the long bristles which surround the mouth are as in *Rhipidura.* Anyone who has seen the forest *Rhipiduræ* in their own haunts would certainly place this species and *R. superciliaris* in this genus.

Iris and bill black ; base of lower mandible whitish ; feet brown, with the scale-joints bluish.

68. ZEOCEPHUS RUFUS (G. R. Gray). (Grant, Ibis, 1896, pp. 112, 464, 540.)

This Paradise Flycatcher is a very handsome bird when alive, before the fleshy parts have turned black by drying, the pale Cambridge-blue bill and feet, and the large eye-wattle of the same colour, contrasting wonderfully with the rich red-umber plumage. We found this bird scarce in most places, but common in the forests at Cape Engaño. It is found only in dense forest, frequenting the lower growth of trees. The nest and eggs are exactly like those of *Hypothymis,* but considerably larger. My Samar specimen was unfortunately destroyed ; it might have belonged to this species or to *Z. cinnamomeus,* which occurs in Mindanao.

Iris black ; eye-wattle and base of bill beautiful slaty French-blue ; bill lighter towards the tip, which is black ; inside of mouth gamboge-yellow ; feet pale slate-blue.

69. CALLAEOPS PERIOPHTHALMICA. (Grant, Ibis, 1895, p. 253.)

The unique specimen of this interesting Paradise Flycatcher was purchased by me in Manila. It had been shot by an Indian, and left with the bird stuffer, unclaimed for years. I had expressed the desire to purchase this bird, but could not prevail upon the Indian to part with it, until one afternoon, much to my delight, the man brought it to me, and I purchased it. The soft parts were stated by my hunter (who skinned the bird) to have been pale blue, as in *Zeocephus rufus,* which is probably quite correct. That this genus finds its nearest allies in *Arses* is, I think, open to doubt. It more resembles *Terpsiphone,* from which genus it differs in wanting a lengthened pair of centre tail-feathers, which are found only on apparently very old males.

The genus *Terpsiphone* is found as a migrant as far north as Japan, and will doubtless some day be recorded from Formosa, while *Arses* is an Australian and Papuan genus. The crest is also like that of *Terpsiphone,* and not the short velvety-pile-like plumes of *Arses.*

70. RHINOMYIAS RUFICAUDA Sharpe. (Grant, Ibis, 1896, pp. 541, 542; 1897, p. 225.)

Scarce. Found by us frequenting the tree-forests of Samar and Leite.

Iris and bill black; legs pinkish brown.

71. RHINOMYIAS ALBIGULARIS B. & W. (Grant, Ibis, 1896, p. 541.)

Scarce. Met with on the lower slopes of Canloön volcano, Negros. A nest was found on March 31, containing two very Robin-like eggs. (See Ibis, 1898, p. 237.)

Iris brown; bill black; feet pale pinkish cobalt.

72. RHINOMYIAS INSIGNIS. (Grant, Ibis, 1895, p. 442, pl. xii. fig. 2.)

We obtained six specimens of this handsome Flycatcher on Monte Data at nearly 8000 feet in January 1895. It frequented the thick, dark, low forest, composed chiefly of evergreen oaks, which covers most of the summit of the mountain.

Iris brown; bill black; feet lead-blue.

73. CULICICAPA HILIANTHEA (Wallace). (Grant, Ibis, 1896, p. 542.)

Culicicapa panayensis (Sharpe). (Grant, Ibis, 1894, p. 506; 1895, p. 443.)

This species, better known to Philippine collectors as *C. panayensis* (Sharpe), is of wide distribution in the Philippines, and doubtless will be met with in all the larger islands. In Palawan it is common in the forest which borders the coast. In Luzon we obtained it only in the high mountains at from 5000 to 7000 feet, where it was feeding with the mixed flocks of other birds in the pine-trees. It generally rests on the lower outside branches, from which it makes short flights after insects. Our Leite specimen was obtained at 1000 feet in the mountains in the north of that island.

Iris, bill, and feet brown.

74. Cryptolopha nigrorum (Moseley). (Grant, Ibis, 1895, p. 443; 1896, pp. 464, 543.)

This species is a true highlander, generally putting in an appearance at 4000 feet, and becoming very common at from 6000 to 8000 feet. It will doubtless be met with in most of the Philippine highlands. It was obtained by us at 8000 feet on Monte Data, at 4000 feet in Mindoro, and at 6000 feet in Negros. This species is represented in Borneo by *C. trivirgata.* It is a busy little bird, and generally hunts for its food in company with other species.

Iris and bill dark brown; legs lead-grey.

75. Cryptolopha olivacea (Moseley). (Grant, Ibis, 1896, pp. 112, 543; 1897, p. 227.)

Widely distributed throughout the Philippines, being met with from Cape Engaño, North-east Luzon, to Mindanao, and from Samar westward to Tawi Tawi. This species frequents the lowland forests, and was not found in the mountain-regions.

76. Stoparola panayensis (Sharpe). (Grant, Ibis, 1896, p. 544.)

Obtained on the lower slopes of Canloön volcano, frequenting the old forest, but by no means common.

Iris dark brown; bill and feet black.

77. Stoparola nigrimentalis. (Grant, Ibis, 1894, p. 507, pl. xiv. fig. 2; 1895, p. 443; 1896, p. 464.)

I believe this was the first new bird shot by me in the Philippines, during a climb to the top of Monte Arayat. I shot it at close quarters on the summit of the mountain; the shot, unfortunately, cut the bird's head right off. I had no doubt, on meeting with this Flycatcher in Benguet, that it was of the same species as the bird I had unintentionally destroyed. This Flycatcher was also met with in Mindoro. It is a highland form, being met with at nearly 7000 feet, but occurs also at 3000 feet.

Iris, bill, and feet black.

78. Siphia philippinensis (Sharpe). (Grant, Ibis, 1894, pp. 408, 507; 1895, p. 443; 1896, pp. 112, 464.)

A lowland species, frequenting thick forest, but occasionally met with in the mountains up to 3000 feet. This species is widely distributed throughout the Philippines.

Iris, bill, and feet black.

79. Siphia enganensis. (Grant, Ibis, 1896, p. 112.)

Met with only at Cape Engaño, where it was decidedly rare.

Iris dark brown; bill black; feet pinkish lead-blue.

[To be continued.]

VIII.—*On a Collection of Birds from Inhambane, Portuguese East Africa.* By W. L. Sclater, M.A., F.Z.S., Director of the South African Museum. *With Field-notes by* H. F. Francis.

The South African Museum has lately received a small collection of birds made at Inhambane, Portuguese East Africa, by two brothers—Messrs. H. F. and W. Francis, and presented by them to the Museum. The only scientific naturalist, so far as I am aware, who has previously visited Inhambane was the late Dr. Peters, of Berlin, who made it one of his stations, during his stay in Mozambique from 1842 to 1848. The volume relating to the Birds in Peters's well-known 'Reise nach Mossambique' was never published, but Peters wrote a short paper in the 'Journal für Ornithologie' for 1868 (p. 131), in which six new species from Inhambane were characterized*.

The collection of the Messrs. Francis contains examples of the following species. I add references, chiefly to Sharpe's edition of Layard's 'Birds of South Africa,' and some field-notes of the collectors.

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* *Dicrurus fugax*, *Philagrus pectoralis*, *Hyphantornis cabanisi*, *Spermophaga nigro-guttata*, *Halcyon orientalis*, and *Caprimulgus mossambicus*.

1. Bias musicus (Vieill.): Sharpe, ed. Layard's B. of S. Africa, p. 337.

2. Erythrocercus francisci Sclater fil., Bull. B. O. C. vii. p. lx (1898).

3. Macronyx croceus (Vieill.).
Macronyx striolatus Sharpe, ed. Layard's B. of S. Africa, p. 532.

4. Pyromelana minor (Reichenb.).
Pyromelana capensis Sharpe, op. cit. p. 463.

5. Hyphantornis subaureus (Smith): Sharpe, op. cit. p. 438.

6. Eurystomus afer (Lath.): Sharpe, op. cit. p. 106.

7. Merops natalensis Reichenb.
Merops nubicoides Sharpe, op. cit. p. 99, pl. iv. fig. 2.

8. Cuculus solitarius (Steph.): Sharpe, op. cit. p. 149.

9. Guttera edouardi (Hartl.): Grant, Cat. B. xxii. p. 382.
Numida cristata Sharpe, ed. Layard's B. of S. Africa, p. 586.
"♂. Bana Point, Inhambane, 2/9/98.
"This Guinea-fowl, which frequents thick bush, is fairly common throughout Gazaland. It is wary and difficult of approach. The iris is bright blood-red; the bare parts on the neck and head are shining leaden black; the loose flap of skin on the neck behind the head is dirty bluish white."—H. F. F.

10. Pternistes humboldti Peters: Sharpe, op. cit. p. 589; Grant, Cat. B. xxii. p. 176.
a. ♂. "Lake Barana, 3 miles west of Inhambane; iris dark hazel.
"This bird is very plentiful and common; I have observed it as far as I have been in this district—viz. 50 miles north of

this port, and also about 60 miles inland. My brother also observed it at a point about 70 miles south of this place, but saw nothing of it beyond that. This species seems to replace in this locality *P. swainsoni* and *P. nudicollis*, neither of which appears to be found here, although I met with the former rather plentifully in the bush-veldt of Gazaland further south. The call of *P. humboldti* is exactly the same as that of *P. swainsoni* and *P. nudicollis*. It frequents thick-scrubby and inaccessible spots during the day, but is always to be found in the Kaffir gardens early in the morning and late in the evening. On perceiving anyone it immediately runs off into the scrub or other thick stuff, and generally rises behind trees or other obstructions, so that it is very difficult to get a shot at it. Like other Bush-Francolins, on being suddenly flushed by a dog it generally takes refuge in the branches of the nearest tree. It is very fond of scratching up the ground-nuts in the Kaffir gardens, and also grubs up the roots of the mandioc plant, which is largely cultivated here. Its native name is 'Inkwari.' N.B.—I noticed that in Gazaland the natives called *P. swainsoni* 'Inkwali,' and in Natal and Zululand the name of *P. nudicollis* is also 'Inkwali' or 'Inkwayi.' I believe the natives of Cape Colony also call *P. nudicollis* by the same name, which shows that all the tribes as far north as this use the same name with a slight difference of pronunciation only."—H. F. F.

b. ♀, also from Lake Barana, Inhambane. "Breeds all the year round; very strong in flight; generally found in pairs, although very often in larger parties, but never more than 5 or 6 individuals together. Bare part of throat and round the eye bright red, approaching vermilion. Legs bright red, shading off to a darker colour on the edges of the scales in front of the legs; feet the same."—H. F. F.

c. ♂. "Inkumbi, 40 miles south of Inhambane. This specimen differs from others of the same kind in having a white patch on the lower breast. This is probably a freak, as all the others we have shot and observed lack the white mark."—H. F. F.

[This bird, although included in Sharpe's edition of Layard's 'Birds of South Africa,' has never, so far as I am aware, been definitely recorded from south of the Zambesi before.—W. L. S.]

11. ÆGIALITIS HIATICOLA Sharpe, op. cit. p. 660.

"♂. Bay of Inhambane, Sept. 5th, 1898. Shot out of a flock of Sandpipers; legs yellowish orange; iris blackish brown."—H. F. F.

12. CALIDRIS ARENARIA Sharpe, op. cit. p. 684.

"Two ♂ adults and 1 ♀. 18/9/98. Bay of Inhambane. Shot out of a flock of upwards of a hundred; the stomach of one contained grains of millet and mealie meal."—W. F.

13. TRINGA SUBARQUATA (Güld.).

Male. 5/9/98. Bay of Inhambane. "Iris blackish: shot out of a large flock."—H. F. F.

14. PHYLLOPEZUS AFRICANUS (Gm.).

Parra africana Sharpe, op. cit. p. 648.

♂. 14/8/98. Inhambane. Crown of head and basal part of bill leaden blue; legs and feet slate-colour; iris blackish brown. Common on the lakes and ponds in this vicinity."—H. F. F.

15. ERYTHROCNUS RUFIVENTRIS (Sund.): Sharpe, Cat. B. xxvi. p. 200.

Female. 5/3/98. Lake Barana, 3 miles N.E. of Inhambane. "Iris rich yellow, shading off into reddish orange on the outer ring; bare skin round the eyes bright yellow; base of bill bright yellow, tip dark horn; feet and legs yellow; toes horn. Rare in this locality."

16. NETTOPUS AURITUS Sharpe, op. cit. p. 750.

Three examples. 11/9/98. Lake Barana, Inhambane, not uncommon.

"Iris darkish brown, almost black; bill dusky yellowish, shading off to almost black towards the point; lower mandible livid, bare skin in between the mandible yellowish orange; legs and feet bluish black. Not uncommon."—H. F. F.

17. NETTION PUNCTATUM (Burch.) : Salvad. Cat. B. xxvii. p. 265.

Querquedula hottentota Sharpe, op. cit. p. 757.

Male. 11/9/98. Lake Barana, Inhambane.

"Legs and feet turquoise-blue, inclined to leaden; bill black from the nostrils, the black part widening out and almost covering the entire bill at the point; basal part of the bill below the nostrils turquoise, running into a very narrow line towards the point and continuing right round; lower mandible more leaden, soft skin between; iris black."—H. F. F.

IX.—*Bulletin of the British Ornithologists' Club.*

Nos. LVI. & LVII.

No. LVI. (October 31st, 1898).

THE fifty-fifth Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 19th of October, 1898. *Chairman*: P. L. SCLATER, F.R.S. Forty-two Members and seven guests were present.

The TREASURER announced that the first business of the Meeting was to choose the Officers of the Club for the new Session, and the following were unanimously elected by show of hands:—

Chairman:	P. L. SCLATER, F.R.S.
Vice-Chairmen	PHILIP CROWLEY. H. J. PEARSON.

Mr. W. E. DE WINTON was elected a Member of the Committee in the place of Major A. P. LOYD, who retired by rotation.

The CHAIRMAN gave the following address:—

BROTHER MEMBERS OF THE B. O. C.—

On opening the Seventh Session of the British Ornithologists' Club, I will venture to trouble you with a few words.

As the Editors of 'The Ibis' have already remarked in their preface to the volume for the present year, one of the leading ornithological events of 1898 is the completion of the 'Catalogue of Birds.' The twenty-sixth volume of this work, prepared by Dr. Bowdler Sharpe and Mr. Ogilvie Grant, the only one required to finish the series, will, I am assured, be laid before the Trustees at their meeting on the 22nd inst., and be ready for issue very shortly afterwards. Thus, after a period of twenty-five years, this most important piece of ornithological work has been brought to a conclusion. No human product is perfect, and the Catalogue has been, and will be, the subject of many criticisms. One obvious defect in it is its want of uniformity, the various authors having been permitted, owing to the wise discretion of the authorities, very liberal opportunities for the expression of their own views in their respective portions, although a general adherence to one plan has been rightly insisted upon. But when the enormous amount of labour required for this work and the absolute necessity of employing more than one author upon such a huge task are considered, it will be obvious that greater uniformity was practically unattainable. In the case of the Catalogues of Reptiles and Batrachians, where the series of specimens and species was not so large, the herpetologists are fortunate in having had the whole of the work performed upon a uniform system by the indefatigable energy of a single naturalist.

The 'Catalogue of Birds,' as complete in twenty-seven volumes, gives us an account of 11,617 species of this Class of Vertebrates, divided into 2255 genera and 124 families. It has been prepared by eleven authors, all Members of the British Ornithologists' Union, and with one exception, I believe (who is not a resident in England), now or formerly Members of this Club. I think it will be universally allowed that we have, in this case, a great and most useful undertaking brought to a successful conclusion.

Another good piece of ornithological work, likewise the product of a Member of this Club, which has just made its appearance, is Mr. Beddard's volume on the 'Structure and

Classification of Birds.' It seems to me to be a most useful Manual on this subject, profusely illustrated, and full of convenient references to further information on various points which it would have been impossible to compress into a single volume. It will be found to be a mine of wealth to those who choose to dig in it, and contains a good summary, not only of the results arrived at by Mr. Beddard himself, but also by Garrod and Forbes, his illustrious predecessors in the office which he holds.

Mr. A. H. Evans, whose volume upon Birds for the 'Cambridge Natural History' we have been long expecting, informs me that this work is finished, except the index, and will be shortly published. We shall all welcome its appearance with the greatest pleasure. A second work that Mr. Evans, together with Mr. Scott Wilson, is engaged upon is the 'Aves Hawaiienses,' of which we have long been waiting for the final part. This, I am assured, is now in a forward state, and is likely to be issued without further delay.

From information received from Mr. Rothschild, I am pleased to be able to say that his somewhat parallel illustrated work on the 'Avifauna of Laysan,' of which the last part was issued in 1893, will also be shortly brought to a conclusion, and that the third and final part will be issued in the course of next year. Taken together, these two works will form a most valuable contribution to our knowledge of the Avifauna of the Northern Pacific. I must also not forget to mention, among recent contributions to our science, the excellent work of Dr. Meyer and Mr. Wiglesworth on the birds of Celebes—one of the most elaborate and complete ornithological monographs on the birds of a special district ever prepared. Celebes, I may remark, as a debatable land between the Australian and Oriental Regions, was in special need of the full treatment and discussion which it has received from the authors of this work.

But the brethren of the B. O. C. and their friends, I think I may say, are at present not less active in the field than in the cabinet. We are fortunate in having with us to-night the two principal members of the new expedition to Socotra and Southern Arabia which will leave England on the 28th inst. It will, of course, take up Natural History in every branch, but with Dr. Forbes and Mr. Ogilvie Grant as its leaders, and a trained taxidermist in attendance, we need not fear that the interests of Ornithology will in any way be overlooked. In Socotra itself much has been already done, but little or nothing has been ascertained ornithologically of the southern coast of Arabia, and we know, from Bent's writings, that even in this commonly supposed barren district, bird-life is abundant in certain spots, which we trust may be within reach of the Expedition.

Besides the Socotran Expedition many other explorations by various members of the B. O. U. are in progress or in contemplation. Capt. Boyd Alexander, who has worked so well in the Cape Verde Islands, is struggling through the middle of Africa from the Cape to Cairo. Under present circumstances he seems likely to come out successfully, and will, no doubt, bring information on birds, if not specimens, with him. Mr. Lort Phillips hopes to return to his favourite quarters in Somali-land during the course of the present winter, and expects to get together the supplementary materials still required for the preparation of his proposed work on the birds of that most interesting country. Mr. John Whitehead, who has added so much to our knowledge of the zoology of the Philippines, proposes to return to the same country very shortly, in order to continue his researches in a field which he knows so well and in which he takes such great interest. Before leaving, he has placed in the hands of the Editors of 'The Ibis' a series of valuable field-notes on the birds collected during his last journey. These will appear in the forthcoming volume of our Journal. Mr. Alfred Sharpe, C.B., who is shortly returning to his post in Nyasaland, promises to continue the employment of collectors in different parts of that Protectorate, the zoology of which he, following in the footsteps of Sir Harry Johnston, has already done so much to investigate.

Finally, I may remark that, as will be seen on turning over the pages of contents in the last volume of 'The Ibis,' we have correspondents interested in our favourite subject in nearly every part of the world, and that the great difficulty of the Editors is to compress so many valuable contributions within the compass of an annual volume.

Before resuming my seat, I wish to say one more word. Our Government, in connection with that of Egypt, has just taken possession of an enormous district in Africa, probably nearly equal to half Europe in extent. It sternly warns all intruders off, even when they are alleged to be of "no political influence." When it comes to regulate the administration of these new territories, it is to be hoped that the interests of Natural History will not be entirely overlooked. Although the Upper Nile districts have been traversed and investigated by many well-known naturalists, there is still very much to be done in these teeming regions of animal-life. We Englishmen are ready and willing to undertake, by individual efforts, much work that in other countries is provided for by State-Explorers; but it is not too much to expect that our Government should at least help us by providing adequate facilities and occasional assistance, and even, perhaps, by contributions to the expensive process of bringing the results thus acquired completely before the world.

A complete copy of the twenty-sixth volume of the 'Catalogue of Birds' was laid on the table by Dr. Bowdler Sharpe.

Mr. G. H. Caton Haigh exhibited and made remarks upon a Warbler, *Lusciniola schwarzi* (Radde), which he had shot on the 1st of October, near North Cotes, Lincolnshire. The large bastard-primary easily distinguished the members of this genus (and those of *Herbivocula*) from the *Phylloscopi*. The summer-home of *L. schwarzi* appeared to be in South-eastern Siberia, and reached about as far west as Tomsk, according to Godlewski, who had mentioned the powerful note of the bird; this was described by Mr. Haigh as disproportionately loud, and it had led to the thorough beating-out of the hedge in which the bird was skulking. It would be remembered that easterly winds had prevailed for a considerable time. So far, *L. schwarzi* seemed not to have been previously recorded within the European area. [For a coloured figure of the specimen, see *supra*, Pl. I.]

Mr. HAIGH also exhibited a specimen of a young female of the Barred Warbler (*Sylvia nisoria*), which he had shot near North Cotes on the 5th of September last. This was the thirteenth example obtained in the British Islands.

Mr. N. F. TICEHURST exhibited a Pectoral Sandpiper (*Tringa maculata*) obtained between Lydd and Rye, in Kent, on the 2nd of August, 1898.

The Hon. WALTER ROTHSCHILD sent a pair of a new *Pitta*, which he described as follows:—

PITTA MEEKI, sp. n.

Superficially resembling the common *P. mackloti* from New Guinea, from which, however, it differs in the absence of the large black spot on the throat, which is only indicated by a dusky shade, the paler and more greyish chin and upper throat, the light brown (not deep rufous) hind-neck, and the pale greyish-brown (not blackish) crown.

Hab. Rossel Island, where Mr. Albert S. Meek has collected a small series.

Mr. ROTHSCHILD also sent for exhibition a skin of the rare *Pitta novæ-hiberniæ*, Ramsay. This species had been long ago described by Dr. Ramsay and the differences from *P. mackloti* had been stated in the original description. Count Salvadori afterwards expressed an opinion that it was the same as *P. mackloti*, because he had seen specimens from New Britain which did not differ from *P. mackloti*—evidently in the belief that the ornis of New Ireland was the same as that of New Britain. Now Captain Cayley Webster had sent a series of a *Pitta* from New Hanover which agreed perfectly with the description of Ramsay, and differed much from *P. mackloti* in the absence of the black throat and breast-band, as well as in having the nape and hind-neck bright red. The species must therefore, for the present, bear the name of *P. novæ-hiberniæ.*

Mr. ROTHSCHILD further described and sent for exhibition, together with its nearest ally, *N. melanotis*, a pair of a new *Nesomimus*, which he described as follows :—

NESOMIMUS CARRINGTONI, sp. n.

Nearest to *N. melanotis*, from which it differs in its longer bill, shorter wing, somewhat paler upper surface, and less heavy black spots on the flanks. Wing, ♂ 110, ♀ 100 mm.; tail, ♂ 110, ♀ 105; culmen, ♂ 34, ♀ 32.

Hab. Barrington Island, Galapagos.

Mr. ROTHSCHILD also sent for exhibition specimens of *Tanysiptera rosseliana*, *Syma megarhyncha*, Salvad., *Strepera rosa-alba*, De Vis (=*Cracticus louisiadensis*, Tristr.), *Parotia helenæ*, De Vis, which, with the exception of the *Tanysiptera* and *Cracticus*, had not before been seen in this country, nor shown to the Club, and a series of *Phonygammus jamesi*, Sharpe, showing the plumages at different ages.

Mr. ERNST HARTERT described the following new birds and exhibited their type specimens, together with examples of allied species for comparison :—

PODARGUS MEEKI, sp. n.

Intermediate in size between *P. intermedius*, Hartert, and *P. ocellatus*, Q. & G., and differing from both in the female not being rufous, but apparently always brownish, and much more heavily marked with black on the under surface than the male and darker above. Wing 190–195 mm., tail 167–180.

Discovered by Albert S. Meek on Sudest Island.

ÆGOTHELES PULCHER, sp. n.

Similar to *Æ. insignis*, Salvad., from Arfak, but differing in its larger size, and in the absence of round buff spots on the back and the middle of the breast. The upper wing-coverts have no blackish bars; the inner webs of the remiges are deep blackish brown, the outer webs chestnut-rufous with some faint blackish spots on the first three primaries, but without light markings. The central rectrices are chestnut-rufous with some narrow blackish cross-bars, but without any light markings. Under tail-coverts pale rufous at base, buffy white at the tip, with a narrow rufous border. Wing 172 mm., tail approximately 150 (very much abraded), tarsus 21.

One specimen from the mountains of British New Guinea.

PACHYCEPHALA ROSSELIANA, sp. n.

Somewhat intermediate between *P. melanura* with a black tail and *P. collaris* with an olive tail, but having the tail blackish, olive at the base, the tips and edges seen on the outer webs of the rectrices broader on the central pair. The yellow collar on the hind-neck is narrower than in *P. collaris*, and slightly interrupted in the middle by an olive-green patch. The feathers of the thighs are black at the base, yellow at the tip, and with a white spot on one web before the yellow tip. Female above dark olive-brown, more greenish on the rump and upper tail-coverts. Tail with the outer webs more olive than in the male. Chin and throat white, with some dusky tips to the feathers; breast and abdomen yellow, separated from the white throat by an ill-defined brownish band. Wing in the male 64–68 mm., tail 68.

Discovered by Albert S. Meek, on Rossel Island.

PACHYCEPHALA ALBERTI, sp. n.

Closely allied to *P. griseiceps*, G. R. Gray, but with a longer and more powerful bill; throat and breast with more distinct dark shaft-lines in the adult birds, tail with very distinct dark cross-bars in certain lights, wing and tail longer. Wing 87–89 mm., tail 67–68.

Discovered on Sudest Island by Albert S. Meek, in whose honour it is named. It is, perhaps, only a subspecies of

P. griseiceps, another very distinct subspecies of which is *P. jobiensis,* Salvad.

CYCLOPSITTACUS INSEPARABILIS, sp. n.

Mr. A. S. Meek has sent a fine series of a new *Cyclopsittacus* from Sudest Island, in which the sexes are alike in coloration, and resemble very much the female of *Cyclopsittacus virago,* Hartert, from Fergusson Island, except that the sides of the head are green and not bluish as in the female of *C. virago.* In the latter species the sexes are widely different.

Mr. OGILVIE GRANT exhibited on behalf of Mr. J. D. La Touche an example of a new species of Short-wing:—

BRACHYPTERYX CAROLINÆ La Touche, sp. n.

Adult male. Very similar to the adult female of *S. nipalensis,* the chest and fore-neck being largely mixed with white. Total length 5·2 inches, culmen 0·48, wing 2·45, tail 1·5, tarsus 1·1.

Adult female. Differs from the male in having the white eyebrow-stripe nearly obsolete, and the fore-neck and chest nearly uniform pale ochraceous-brown. Total length 5 inches, culmen 0·45, wing 2·3, tail 1·35, tarsus 1·1.

As in *B. nipalensis,* the bill is relatively slender; in the closely allied *B. leucophrys,* from Java and Lombok, the bill is stouter and the upper parts darker.

Hab. Kuatun, N.W. Fohkien.

Mr. OGILVIE GRANT exhibited on behalf of Mr. C. B. Rickett the type of a new species of Warbler:—

LUSCINIOLA MELANORHYNCHA Rickett, sp. n.

Adult male. Nearest to *L. russula* (Slater), but at once distinguished by its black bill, differently shaped wing, longer tail, and darker colour, especially on the sides, flanks, and under tail-coverts, which are brown instead of pale buff. The 2nd primary considerably shorter than the 10th, the 5th slightly longer than 4th and 6th. Total length 5·5 inches, culmen 0·4, wing 2, tail 2·3, tarsus 0·75.

Hab. Kuatun, N.W. Fohkien.

Mr. Grant remarked :—"Both this species and the bird described under the name of *Cettia russula* by the Rev. H. H. Slater have twelve tail-feathers and belong to the genus *Lusciniola*, the latter species being nearly allied to *L. intermedia* (Oates). Though *L. russula* superficially resembles *Cettia pallidipes*, with which Mr. Slater compared it, it is structurally very different."

Mr. Grant also exhibited a specimen of the genus *Eulacestoma* of De Vis, from Mt. Albert Edward, in S.E. New Guinea; it was apparently a young individual of *E. nigritorque*, De Vis, but had no black pectoral collar and a good deal of rufous on the wings.

Mr. D. Le Souëf brought for exhibition nests and eggs of *Manucodia gouldi*, *Graucalus swainsoni*, and *Ptilorhis alberti*, from Northern Queensland. He also showed, with the aid of a lime-light lantern, a remarkable series of photographs of the nests and eggs of Australian birds, taken by himself during his expeditions in that continent.

Mr. Sclater stated that on the 27th of June last he had had the pleasure of visiting a nesting-place of the Spoonbill (*Platalea leucorodia*) in Holland, which he had not previously seen, and had found about 300 pairs breeding there in the reeds on one side of a lake. The lake was fortunately within a large enclosed area owned by a private individual, and strictly preserved. Neither eggs nor birds were allowed to be disturbed, and there was every prospect of this (believed to be the largest breeding-place of the Spoonbill now existing in Holland) being maintained securely. Two other nesting-places of this bird formerly visited by Mr. Sclater, one on the Nieuwerkerker Platt in 1867 (see Gould's 'Birds of Great Britain,' iv. pl. 22) and the other on the Horster Meer in 1877 (see 'Ibis,' 1877, p. 413), had been destroyed by the drainage of the swamps in which they were situated.

No. LVII. (November 28th, 1898).

The fifty-sixth Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 16th of November, 1898. *Chairman*: P. L. Sclater, F.R.S. Twenty-three Members and six guests were present.

The Hon. Walter Rothschild sent for exhibition an egg of the "Twelve-Wired Bird of Paradise" (*Seleucides ignotus* or *S. albus*). It had been found in an open nest in a Pandanus-swamp on the Vanapa River in British New Guinea, on a Pandanus tree. The nest was a large structure, about 10 inches across and 6 inches high, consisting externally of dry Pandanus leaves, then of pieces of rotten wood, and lastly of small twigs, the cup being rather flat and by no means softly lined. The single egg found resembled closely those of other *Paradiseidæ*, and especially those of the genus *Ptilorhis*, being of about the size of a Rook's egg, and of a cream colour, with more or less longitudinal rufous-brown and purplish-grey spots, which were most frequent near the thick end. It measured 40 mm. in length, and 22·5 on its broadest diameter.

Mr. Ernst Hartert exhibited specimens of four new species of "Thickheads" (*Pachycephala*) and described them as follows:—

Pachycephala kuehni, sp. n.

Resembles closely *P. cinerascens*, Salvad., from Ternate, Batjan, Tidore, Halmaheira, and Morotai, but the male differs in having the abdomen and breast ochraceous buff, the throat pale brownish, while the abdomen in the adult male of *P. cinerascens* is white, or greyish white, and the throat and breast are ashy grey. The upper surface is slightly more brownish. The female differs from the female of *P. cinerascens* in being browner above, and in having the underside ochraceous buff, without any grey, and the dark streaks along the shafts are much more developed.

Hab. Little Key Island. Named in honour of Mr. Heinrich Kuehn, who has sent a small series of both sexes, adult and young, of this new species.

PACHYCEPHALA EXAMINATA, sp. n.

Differs from *P. lineolata*, Wall., of the Sula Islands, in having the abdomen (which is white with or without a faint ochreous tinge in *P. lineolata*) ochraceous buff, and the under tail-coverts buff instead of white. The wing is a little longer, measuring 81–82 mm. The back is more brownish, the grey cap thus becoming more conspicuously in contrast to the back. In the male the throat is white, the chest washed with grey. The female has the underside uniform ochraceous buff and the wing only about 78 mm. long. (For the name of the Sula form *cf.* 'Novitates Zoologicæ,' vol. iv. p. 131.) If the name *P. griseonota* should be adopted it could apply only to the Sula bird and not to the bird from Buru, judging from the description.

Hab. Buru.

PACHYCEPHALA MEEKI, sp. n.

♂ *ad.* Similar to *P. leucogaster*, but differs in having the black crown less sharply defined and almost passing into the colour of the back, which is much darker and more blackish than in *P. leucogaster*. The tail and upper tail-coverts are almost pure black and much darker than in the last-named species. The sides of the breast and abdomen are grey, not white. The wing is shorter, measuring only about 82 mm. (against about 90 in *P. leucogaster*). *P. meeki* also differs from *P. arctitorques* in its grey sides and darker back, the latter species being more closely allied to *P. leucogaster* than to *P. meeki*. Measurements of the male: wing 81–82, tail 64, culmen from base 17 mm.

♀ *ad.* Above mouse-brown, more greyish on the upper tail-coverts; an indistinct line over the eyes and ear-coverts rufous-brown; throat buffy white; remainder of under surface rusty buff; chest with some small and narrow blackish shaft-lines; middle of abdomen white; sides of chest and flanks washed with grey; under wing- and under tail-coverts pale buff.

Hab. Rossel Island, Louisiade Archipelago.

PACHYCEPHALA CONTEMPTA, sp. n.

The yellow *Pachycephala* of Lord Howe Island has been treated as the same as *P. gutturalis* in the 'Catalogue of Birds,' vol. viii., where at least three different species or subspecies are united under the title of *P. gutturalis*; but *P. contempta,* as I propose to call the Lord Howe Island form, differs from *P. gutturalis* in having the basal portion of the tail for more than half of its length greenish, often for two-thirds of its length, in having the bill stronger and longer, in having the yellow band on the hind-neck interrupted by pale olive-green in the middle, and in being generally larger. Wing 92–94, tail 83, culmen from base 17–18 mm. Another closely allied form is *P. occidentalis,* which, however, has the base of the tail grey and the bill rather short.

Mr. HARTERT further characterized a new Humming-bird, which he called

CYANOLESBIA BERLEPSCHI, sp. n.

This was described as the most beautiful of all the *Cyanolesbiæ,* and perhaps the most distinct species of the genus, being more different than any of those *inter se.* The female was easily recognizable from that of the allied species in having the breast and entire abdomen white instead of cinnamon-rufous. The male seemed to be nearest to that of *Cyanolesbia margarethæ* from Caracas and *C. kingi* from Bogotá, but the outer tail-feathers were longer and much wider, of a peculiar glittering metallic blue; the central rectrices were not green as in *C. margarethæ,* but purplish blue with a greenish glitter at the tips. Wing 71, tail 155, outer rectrices 9–10 mm. wide.

Mr. Hartert stated that the Hon. Walter Rothschild had received a male and four females of this bird from the hills of Cumana in Venezuela, and that there was a second male from Caripé in the British Museum, with the tail not fully grown.

The typical specimens were collected by Mr. Caracciolo and sent to the Tring Museum by Mr. André, of Trinidad.

Mr. Howard Saunders exhibited, on behalf of Mr. W. Drury, a specimen of the Wood-Sandpiper, *Totanus glareola,* shot by the latter near Lough Cullin, co. Mayo, on the 5th of September last. Only three examples of this species had been previously recorded from Ireland, and all of them from one locality, viz. in co. Wicklow.

Dr. R. Bowdler Sharpe exhibited a specimen of the Black-headed Weaver-Finch (*Munia atricapilla*) which had been presented to the British Museum by Mr. G. Hubert Woods, who had shot it out of a flock of twelve individuals in Suffolk on the 26th of October last.

Mr. Hartert stated that he had also seen a small flock of these Weaver-Finches in the reed-beds on the Tring Reservoir, and that one had been recently shot there.

Dr. Bowdler Sharpe read a paper on the present status of the birds in the "British" List, which he believed to amount at the present moment to 445. A discussion ensued, in which the Chairman, Mr. Howard Saunders, Mr. H. E. Dresser, Mr. H. J. Pearson, Mr. W. E. De Winton, Mr. Hartert and others took part. It was decided that the subject should be further discussed at a subsequent meeting of the Club.

Mr. Robert Read made some remarks on the apparent variation in the downs of certain species of Ducks at different seasons of the year. Specimens would be exhibited at the next meeting of the Club, when the subject would be further explained.

X.—*Notices of recent Ornithological Publications.*

1. *Alcock on the Birds of the Pamirs.*

[Report on the Natural-History Results of the Pamir Boundary Commission. By A. W. Alcock, M.B., Surgeon-Naturalist to the Commission. With a list of the Plants by J. F. Duthie, and a notice of the Rock-specimens by T. H. Holland. Calcutta, 1898. 48 pp.; 5 pls.]

Dr. Alcock accompanied the Pamir-Boundary Commission of the summer of 1897 as Naturalist, and now gives us an account of the results. Examples of 143 species of animals were obtained, of which 66 came from the Pamirs. The birds have been determined by Mr. Finn, of the Calcutta Museum. Those of the Pamirs are of 37 species, besides a few others not positively identified. They are nearly all well known. Besides these, specimens of 18 other species were procured on the route from Kashmir to Bozai Gumbuz, where the Little Pamir was entered.

2. *Annals of Scottish Natural History.*

[The Annals of Scottish Natural History, a Quarterly Magazine, with which is incorporated 'The Scottish Naturalist.' No. 27, July 1898, and No. 28, October 1898.]

An editorial notice of the action taken for the protection of wild birds and their eggs in Scotland is the first paper within our scope in No. 27; and Mr. Peter Anderson follows with a useful list of 128 species of birds observed by him during twelve years of residence on the island of Tiree. The great feature is, however, the account given by Mr. William Evans of the discovery of several pairs of Pintails (*Dafila acuta*) nesting on Loch Leven, in Kinross-shire—the first thoroughly-authenticated instance of the breeding of this Duck in Great Britain. The minor notes are of unusual interest; among the records being the first occurrence for more than thirty years of the Marsh-Harrier in Dumfriesshire.

To No. 28 Mr. T. G. Laidlaw contributes a valuable report on the movements and occurrences of birds in Scotland during 1897, and we may remark that this seems to be the clearest record published on the subject. Among the minor notes, Mr. Henry Evans announces the capture of a Great Shearwater at St. Kilda, and we notice that for this species the old and familiar name *Puffinus major* (Faber) is employed. We fear, however, that it must be rejected in favour of *P. gravis* (O'Reilly), which has priority by four years, and is not only well described but unmistakably figured. Salvin, who never discarded an accepted name without reluctance, felt compelled to adopt the title *P. gravis* (Cat. B. Brit. Mus. xxv. p. 373).

3. *Arundel on Ackworth Birds.*

[Ackworth Birds, being a List of Birds of the District of Ackworth, Yorkshire. By Major Walter B. Arundel. 8vo. Gurney & Jackson, London, 1898.]

Roughly speaking, Ackworth is in the neighbourhood of Pontefract, an undulating and well-wooded district. The species enumerated are 149, and are divided into Permanent Residents (54), Regular Summer-Residents (26), Regular Winter-Residents (9), and Visitors (60). The author acknowledges assistance from Mr. J. H. Salter and others, and although local or hypercritical ornithologists may be able to pick holes in 'Ackworth Birds' here and there, yet it seems to us to be, on the whole, a very careful piece of work.

4. *Audubon and his Journals.*

[Audubon and his Journals. By Maria R. Audubon, with Zoological and other Notes by Elliott Coues. With Thirty-seven Illustrations, including three hitherto unpublished Bird Drawings, and ten Portraits of Audubon. 2 vols. 8vo. London: John C. Nimmo, 1898.]

We are not surprised at the appreciation of Audubon and his work felt by our brethren in the U.S. Audubon, though he was born in France and published his principal books in England, devoted the best part of his life to the study of the birds and other animals of his adopted country, and, considering the circumstances in which he was placed, achieved a remarkable success.

For the two volumes now before us we have to thank the energy of his grand-daughter, most efficiently aided by our friend and correspondent Dr. Coues. They commence with a biography of Audubon, the date of whose birth, strange to say, has never been ascertained. But he is believed to have been born in 1780, and at any rate he died on January the 27th, 1851, over 70 years of age. We will not go into the events of his life, the history of which is given here, with many interesting particulars, by his grandchild, and will, we are sure, be read with great interest by all ornithologists. The remainder of the present work is taken up with Audubon's Journals—those kept in Europe 1826–29, in Labrador in 1833, and on the Missouri in 1843. These, also, although they are of course rather antiquated, contain much useful matter. The second volume concludes with what are called "The Episodes," which are essays introduced in the first three volumes of the 'Ornithological Biography,' but not reprinted in the octavo edition of the 'Birds of America.' The volumes are well printed and nicely illustrated, and deserve a prominent place in the library of every lover of bird-lore.

5. '*The Auk.*'

[The Auk. A Quarterly Journal of Ornithology. Vol. xv. Nos. 3, 4, July and October 1898.]

No. 3 opens with a coloured plate and full description of the Imperial Ivory-billed Woodpecker (*Campephilus imperialis*), by Mr. E. W. Nelson, who had the good fortune to meet with examples of this large and handsome species in Mexico, as far south as Michoacan. Mr. R. Ridgway contributes the first paper of "a series intended for the publication of supposed new forms in advance of the larger work on the Birds of North and Middle America, upon which the author has been engaged for the past four years, the publication of which must necessarily be long delayed," and of these (Fringillidæ) he gives brief diagnoses of 14 genera and 6 species or subspecies. It is unnecessary to copy a mere list of their names, while to do more would involve a full abstract of the whole article. Mr. Joseph Mailliard found *Oceanodroma furcata* nesting in the same burrows with our Leach's Petrel (*O. leucorrhoa*), on an islet at the mouth of Sitka Bay, Alaska; and it may be advisable to warn British ornithologists that the trivial name "Fork-tailed Petrel," which we apply to "Leach's Petrel," is used by Americans for *O. furcata*. Mr. J. Grinnell gives an account of the land-birds observed in winter on the lofty island (3000 ft.) of Santa Catalina, California, and follows with descriptions of a new subspecies or geographical race of Thrasher (*Harporhynchus*) and a new subspecies of Wren (*Salpinctes*); while Dr. E. A. Mearns, as well as Mr. McGregor, describe other new species from Lower California. Mr. W. Palmer has a paper on the smaller Shrikes found in North America to the east of the Plains. In the General Notes Dr. Elliott Coues opposes Dr. L. Stejneger's views about the generic names of some of the Swallows.

Dendroica kirtlandi, with a coloured plate, is the subject of the first article, by Mr. F. M. Chapman, in No. 4. Next, Mr. D. G. Elliot calls for nothing less than the rejection of Canon xl. of the A. O. U. Code, which is that "the original typography of a name is rigidly preserved, unless a typographical error is evident;" and Prof. J. A. Allen defends Canon xl. against Mr. Elliot and Dr. Elliott Coues. It is not for us to express an opinion, but those who are interested in questions of nomenclature will find much amusement and some instruction in these articles, especially if they have had a classical education. Passing over contributions of purely local interest, we reach Mr. A. W. Anthony's paper on the Avifauna of the Revillagigedo Islands, off Lower California. Mr. Ridgway publishes a second instalment of his new species and subspecies of American birds; and he also describes a new Humming-bird, *Atthis morcomi* (near *A. heloisæ*), from a female obtained in the Huachuca Mountains, Arizona, the adult male being as yet unknown. From the Truando River, Colombia, Mr. C. W. Richmond describes *Gynostimops cassini* sp. n. Lastly, Mr. C. K. Clarke claims to have discovered the long-sought-for nest (with 5 eggs!) of *Totanus solitarius* on Lake Ontario, but the evidence of identification seems to us to be by no means conclusive.

6. *Beddard on the Structure and Classification of Birds.*

[The Structure and Classification of Birds. By Frank E. Beddard, M.A., F.R.S., Prosector and Vice-Secretary of the Zoological Society of London. Longmans, Green & Co. 1898. 1 vol. 8vo. 548 pp.]

This long-expected volume will, we are sure, be a most useful book of reference to the ornithologist, containing, as it does, a complete summary of the present state of our knowledge of the structure of the large and varied Class which forms the special subject of our studies. Fürbringer's huge volume is too ponderous and too lengthy, and Gadow's excellent memoir (in Bronn's 'Tierreich') is written in a tongue not understood by all of us. Here we have a conveniently-sized and excellently-illustrated handbook, written in plain language which any one can understand, and full of references for the guidance of those who wish to enter more deeply into any special branch of the subject.

We should have been glad, however, if the author had stated his conclusions as to the best classification of birds a little more definitely. We are all aware that no group of animals can be satisfactorily arranged in a straight line, and this is eminently true of the Class of Birds. In ordinary work the '*Stammbaum*' is not available, and we must have for common use a linear series beginning either at the top or the bottom. We suppose that Mr. Beddard's "picked" series is that followed in the present volume, but it is not quite clear that such is the case, and we should prefer to have no doubt on the matter. The place assigned to the "Accipitres," considering their many Passerine characters, seems to be rather low, and the "Sphenisci," in our opinion, should be sunk nearly to the bottom of the series.

Another group which appears to be treated rather slightingly by Mr. Beddard is the "Passeres"—which contains more than half the known species of the whole Class of Birds. Only five pages are allowed for its discussion, whereas some five-and-thirty are assigned to the comparatively small group of "Struthiones." We venture to suggest that our friend might do well to give us a second volume on the Structure and Classification of the Passeres, upon which we suspect he would find a heap of notes in the MSS. of Garrod and Forbes—his illustrious predecessors in the Prosectorship, besides what he has accumulated during his own tenure of the same office. There is no point in the whole subject of Birds upon which we so much require further information.

7. *Butler's 'Birds of Indiana.'*

[The Birds of Indiana. A Descriptive Catalogue of the Birds that have been observed within the State, with an Account of their Habits. By Amos W. Butler. 8vo. Indianapolis, 1897.]

Mr. A. W. Butler, the Curator of the Department of Ornithology of the Indiana Academy of Science, has kindly sent us a copy of the reprint of his essay on the birds of Indiana, which was originally issued as a part of the Geological Report for 1897 on that State. It contains an account of the occurrence, distribution, breeding-range, nesting-habits, and food of the birds that have been ascertained to occur within the State's limits, and gives short descriptions of all the species (321 in number). The nomenclature and arrangement are those of the American Check-list. The volume will be manifestly of great use to the local ornithologists. It is illustrated by numerous figures in the text, which vary much in style of execution.

8. *Delaware-Valley Ornithological Club's 'Proceedings.'*

[Abstract of the Proceedings of the Delaware Valley Ornithological Club of Philadelphia, for the years 1892 to 1897. 8vo. Philadelphia, 1898.]

This is the title of a society established at Philadelphia for the study of the birds of New Jersey and Eastern Pennsylvania, and of ornithological science in general, and appears to be a flourishing institution. Several well-known contributors to 'The Auk' are among its members. The publication now before us contains an abstract of the 'Proceedings' of the Club from 1892 to 1897. Many of the papers read have been published in 'The Auk,' 'Science,' and elsewhere. In future it is proposed to issue a yearly volume.

9. *De Vis's Report on the Birds of British New Guinea,* 1896–97.

[Annual Report on British New Guinea from 1st July, 1896, to 30th June, 1897, with Appendices. 4to. Brisbane, 1898.]

The Annual Report to the Queensland Parliament for 1896–97 contains in its Appendix (A. A., p. 81) a report by Mr. De Vis on the birds collected by Sir William Macgregor, the Lieut.-Governor of British New Guinea, during his recent adventurous journey overland from the Mambaré River on the east, across the central range, to the Vanapa River on the west, also during the expedition subsequently sent into the Vanapa Valley, and the return over the Wharton Range to the Mambaré by a new track. The whole series obtained consists of 471 specimens, which are referred to 175 species. Of these the principal novelties have been already characterized by Mr. De Vis in this Journal (Ibis, 1897, p. 371), but the following 10 additional new species are described in the present report :—

Oreopsittacus viridigaster, Cyclopsittacus nanus, Nasiterna orientalis, Rhipidura lætiscapa, Gerygone robusta, Pachycephala strenua, Ptilotis perstriata, P. piperata, Sarganura maculiceps, and *Ibis* (*Falcinellus*) *humeralis.*

Sarganura (op. cit. p. 87) is a new genus of Meliphagidæ, but its exact position is not stated.

10. *Hartert on Birds from Nias Island.*

[Einiges über Vögel von der Insel Nias. Von Ernst Hartert. Ornith. Monatsb. vi. 1898, p. 89.]

Rosenberg, Modigliani, and other known collectors have made us pretty well acquainted with the birds of Nias Island, off the west coast of Sumatra, and Heer Büttikofer (Notes Leyd. Mus. xviii. p. 195) has lately given us an excellent list of the 128 species yet recognized as belonging to its avifauna. The receipt at Tring of a series of bird-skins collected by Herr Raap in Nias has induced Mr. Hartert to prepare the present paper, which contains notes and remarks on about 30 species, some of which are additions to the list, while two new subspecies are described under the names *Aethopyga siparaga niasensis* and *Chloropsis zosterops parvirostris*. On the whole there can be no doubt that the avifauna of Nias is Sumatran, with a certain infusion of peculiar species and subspecies.

11. *Hett's 'Dictionary of Bird Notes.'*

[A Dictionary of Bird Notes, to which is appended a Glossary of Popular, Local, and Old-fashioned Synonyms of British Birds. By Chas. Louis Hett. 12mo. Brigg, 1898.]

The author has evidently bestowed considerable care upon a very difficult task, for the human sense of hearing varies more than sight, and agreement as to the syllabic reproduction of the notes of birds is practically unattainable. The scheme is business-like. First comes an alphabetical list of the call-notes, "posted," in commercial phrase, to the utterer; and this is followed by a list of birds and the sounds which they emit. Some amusing "promiscuous feeding" is to be found in this portion; while a glossary of popular, local, and old-fashioned names is useful and suggestive. It was unnecessary to inform us that the word "couple" means two, and it is erroneous to assume that two are necessarily "a pair." We never before heard of a "murmuration" of Starlings, but the word has a commendably blessed and soothing sound.

12. *'Irish Naturalist.'*

[The Irish Naturalist, a Monthly Journal of general Irish Natural History. Edited by G. H. Carpenter and R. Lloyd Praeger. Vol. vii. Nos. 1–11. Dublin: Eason & Son, Limited. 1898.]

We are glad to see that this useful journal maintains the reputation with which it started in 1892. As regards birds, the first contribution in 1898 is by Miss Lena Gyles (now Mrs. R. M. Barrington), and treats of the occurrences in Ireland of the Wryneck (*Iynx torquilla*), a bird which is an extremely rare visitor to the sister-island, and was not recorded at all until 1877. Even now only five examples are known, and two of these have been obtained at lighthouses, for the "returns" from which all students of migration are infinitely indebted to Mr. Barrington. An account, by Mr. Moffat, of a visit to the Copeland and Mew Islands—once the famous breeding-place of three species of Tern—is supplemented by a list of the rare Irish-killed birds in the Belfast Museum, many of these being "classical" in reputation, as having been mentioned by Thompson. Mr. R. Warren gives an excellent description of the habits of the Long-tailed Duck in Killala Bay, and his observations are not made chiefly "along the barrels of a gun," which, as Mr. Lockwood Kipling observes, "is false perspective." Mr. Warren also describes the migration last spring of *Motacilla alba* along the banks of the Moy; and, we may add, there can be hardly any doubt that a pair of White Wagtails were nesting early in June near Belmullet. In fact Mr. Warren's experiences, taken with those of Mr. G. H. Caton Haigh in North Wales, and of others in Scotland, all tend to show that there is a fairly regular migration of this species—of far more importance than has hitherto been realized—along the western portions of the British Islands, and probably on the way to Iceland. Mr. Warren's experienced eye also detected, in summer, an immature Iceland Gull among some Herring-Gulls feeding in a field in Co. Sligo, and we are perfectly satisfied with his identification, which is saying a good deal in the case of a young Gull. In the longest paper of the volume Mr. C. J. Patten gives a useful list of the species of birds observed in Dublin Bay. Short notes on rare or uncommon birds are contributed by Messrs. Barrett-Hamilton, E. Blake Knox, R. Patterson, and others; one feature being the general testimony to the spread of the Stock-Dove (*Columba œnas*) in Ireland, where the bird was formerly very local, and practically confined to the north-eastern portion.

We hope this useful periodical may receive support in Great Britain, for naturalists are necessarily scarce in Ireland. Its cost is the mere trifle of 5*s*. yearly, and, although our notice is limited to birds, a very large portion of the work is devoted to other branches of natural history.

13. *Meyer on the Proceedings of the Deutsche Ornithologische Gesellschaft.*

[Der Deutschen ornithologischen Gesellschaft in Dresden vom 28.–30. Mai 1897. No. 2. Aus der 22. Jahresversammlung. Herausgegeben von A. B. Meyer. Abhandl. u. Ber. zool. anthrop. Mus. Dresden, 1898 99, p. 1.]

Dr. Meyer has devoted a number of the 'Abhandlungen' of the Royal Zoological, Anthropological, and Ethnographical Museum of Dresden to an account of the proceedings of the Anniversary Meeting of the German Ornithological Society held at Dresden in 1897, or rather to such of them as have not been already published in the 'Journal f. Orn.' and elsewhere. Among them we find an interesting narrative by Dr. Koenig of his recent ornithological tour up the Nile, during which he collected some 700 birdskins. Dr. Koenig met with *Rhynchops* first on April 7th near Nagh Hamadi, and obtained altogether 14 specimens. Herr v. Biederman gives copies (plate i. figs. 2, 3) of the two newly-discovered pictures of the Dodo in the Dresden Gallery, and a list of the figures of the Dodo (12 in all) previously known to exist. There are also several papers on questions of nomenclature and other subjects, and an account of the great "demonstration" of Paradise-birds (held May 30th), when the fine series of these birds in the Leyden Museum was supplemented by specimens from Tring, Berlin, Milan, Genoa, and other museums. Altogether this is a very attractive publication for ornithologists.

14. *Meyer and Wiglesworth: 'Birds of Celebes.'*

[The Birds of Celebes and Neighbouring Islands. By A. B. Meyer and L. W. Wiglesworth. Pp. i–xxxiii, 1–962. 2 vols. Imperial 4to. Berlin: R. Friedländer & Sohn, 1898.]

The island of Celebes is of special interest to students of geographical distribution because it lies between two of the great zoological Regions—the Oriental on the north and the Australian on the south—and has been referred by some authorities to the first and by others to the last of these Regions. It was, therefore, an inviting subject for an ornithological monograph of an exhaustive kind, such as Messrs. Meyer and Wiglesworth have provided in the two solid volumes now before us. Beginning with some excellent maps, which show exactly the area to which the authors devote their attention, they discuss the previous literature on the subject, the seasons and winds of Celebes, the general subject of migration in the East-Indian archipelago, the variation of birds under different phases, their geographical distribution around the Celebesian area, and a number of other collateral subjects, before they come to the systematic part of their work, in which is contained a full account of the 393 species as yet recognized as belonging to the Celebesian avifauna. Fifteen genera are stated to be restricted to Celebes, of which 4 are of first-class importance, 8 of second-class (*i. e.* not quite so distinct as the four first), and 3 of third-class value. Seventy-seven species are peculiar to the island of Celebes, and these in like manner are divisible into three categories, 10 being of the first class, 22 of the second, and 45 of the third. The final conclusion arrived at is that one half of the peculiar birds of Celebes have their nearest affinities in the Oriental Region, and one fifth only in the Australian Region, but that the Australian forms seem to be, on the average, rather more strongly differentiated than the Oriental forms. Ornithologists must, therefore, in future follow Mr. W. L. Sclater's advice, deduced from a study of the island's mammals (see 'Geographical Journal,' viii. p. 388), and attach the Celebesian Subregion to the Oriental and not to the Australian Region.

Taking this important work as a whole, we venture to pronounce it to be one of the most complete and exhaustive ornithological monographs that have ever been written on a special geographical area, and we beg leave to congratulate the authors on having brought their task, which we know has cost them several years of severe labour, to so successful a conclusion.

The monograph is accompanied by 45 (mostly) coloured plates, not all, perhaps, of first-rate excellence, but many of satisfactory quality.

We cannot forbear adding the following quotation from the work: it would make an excellent text for an ornithological sermon!—"At the present day the process of genus-making, which bids fair not to cease till every species—we do not speak of geographical races—has a genus for itself, is imposing a severe tax on the brains of ornithologists, and is defeating its own ends. Even the closest specialists cannot always refer species to their 'proper genera,' because their 'peculiarities' are not peculiar to them, or are intangibly small."

With reference to our authors' allusion (p. 704) to the supposed discovery of a Cuban Owl (*Glaucidium siju*) in the Canaries by Dr. Koenig, it should be noted that, after the statement made by Mr. Meade-Waldo (Ibis, 1893, p. 186), there can be no doubt that this was an error, and that the Owl in question was brought to the Canaries by human agency. This fictitious event cannot, therefore, be quoted as an instance of "discontinuous distribution."

15. *Nelson on new Mexican Birds.*

[Description of new Birds from Mexico, with a Revision of the Genus *Dactylortyx*. By E. W. Nelson. Proc. Biol. Soc. Washington, xii. p. 57 (1898).]

The following new species and subspecies are based upon specimens of Mexican birds in the collection of the Biological Survey, U. S. Department of Agriculture:—*Heleodytes brunneicapillus obscurus, Vireo nanus, Progne sinaloæ, Phœnicothraupis rubicoides roseus, Amphispiza bilineata grisea, Guiraca chiapensis, Grallaria ochraceiventris, Amazilia cinnamomea saturata, Dactylortyx chiapensis,* and *D. devius.* Mr. Nelson makes out four representative species of *Dactylortyx* from different parts of Mexico.

16. *Neumann on the Avifauna of German and British East-Africa.*

[Beiträge zur Vogelfauna von Ost- und Central-Africa. Von Oscar Neumann. Journ. f. Orn. 1898, p. 227.]

This is the first portion of an account by Herr Oscar

Neumann of the birds of which he obtained or observed specimens during his travels in German and British East-Africa from 1892 to 1896. As the specimens have been carefully determined by Herr Neumann himself, after examining the African Collections, not only in Berlin, but also in London, Tring, Paris, Brussels, Vienna, Munich, Frankfort, and Hamburg, and as their names and references are accompanied by the author's field-notes, it will be obvious that the resulting memoir, which will treat of about 530 species, will be of no small importance to students of East-African ornithology. The present instalment, which begins with the Struthiones and ends with the Columbæ and Gallinæ, treats of 120 species. Among these *Struthio massaicus* and *Turturœna harterti* are described as new species, and *Haplopelia larvata kilimensis* (from Kilimanjaro) and *Pternistes nudicollis melanogaster* (from Tanga) as new subspecies. Of *Turturœna harterti, Pternistes nudicollis melanogaster, Pt. nudicollis typicus, Pt. n. humboldti,* and *Pt. lencopareius* coloured figures are given.

The introduction to this paper contains a short account of Herr Neumann's routes and collecting-stations, with many very interesting ornithological remarks, which are well worthy of perusal. The traveller, after collecting in the island of Zanzibar and on the opposite coast, left Tanga finally for the interior at the end of April 1893, and arrived at Irangi a month later. Hence an excursion was made to the well-known emporium Mpapwa in Northern Ugogo for fresh supplies, and Irangi was reached again on Sept. 7th. From Irangi the route was north-westward towards the Victoria Nyanza, passing the large and little-known Lake Manyara, of the bird-life of which an extraordinary account is given (see also on this subject the same author in Orn. Monatsb. March 1890). Besides enormous flocks of residents, such as Pelicans, Flamingos, Terns, Ducks, and Geese, Lake Manyara seems to be the favourite resort during winter of multitudes of visitors from the north—Waders, Herons, Ibises, and Plovers. These birds feed on a small species of fish, which is abundant in the natron-stained waters of the lake. In the adjoining acacia-forest bird-life was also found to be extremely well represented, and in the neighbouring desert which separates Manyara from the salt Lake of Nguruman some of the specimens upon which Herr Neumann has based his new Ostrich, *Struthio massaicus*, were obtained. This Ostrich is stated to be a red-necked form allied to the northern *S. camelus*, and not blue-necked like *S. molybdophanes*, to which species the Ostrich of German East-Africa has been hitherto usually referred.

After going some way further north, Herr Neumann turned westward towards Lake Victoria, which he reached at Mori Bay in February 1894. In Kavirondo he collected largely for several months, and then proceeded to Uganda, and round the north side of the lake to Bukoba and Muansa. Returning to Lubwas, on the Nile, he had the misfortune of finding the large collections he had left there for safe custody completely spoiled by damp. Nothing daunted, Herr Neumann started on another hunting expedition in the provinces of Chagweh and Bulamwezi, where elephants and other large game were abundant, but did not cease to collect birds. He returned to Mumia's, on the Uganda caravan-road, in November 1894, where he met Mr. F. J. Jackson ; and thence proceeded homeward through British East-Africa. On the Mau plateau birds were abundant, and five new species were discovered. Swarms of *Irrisor jacksoni* and other varieties were met with. Finally our energetic friend visited the slopes of Kilimanjaro, and made good collections at a height of some 9000 feet, obtaining examples of many new species, among which was the *Pipra*-like wonder named *Atopornis diabolicus* (!). On Feb. 5th, 1895, Herr Neumann reached Mombasa, and took ship for Tanga, whence he returned to Europe after an absence of two and a half years. It will be thus evident that Herr Neumann's journeyings have been long and his collections extensive, and we look forward with great interest to the issue of the second and final portion of his account of them.

17. *Neumann on the Species of* Numida.

[Die Helm-perlhühner. Von Oscar Neumann. Orn. Monatsb. vi. Feb. 1898.]

Herr Neumann attacks the very difficult question of the species of typical *Numida*—*i. e.* the naked-headed group of *N. meleagris* and its allies, which have been frequently confused together and misnamed. He makes out seven species, besides three subspecies, but leaves several points open, to be determined only by examination and comparison of type-specimens. The most absolutely distinct species seems to be *N. ptilorhyncha* with its bristled nostrils. Of *N. marungensis,* based upon Bohm's MS., no specimens are known in Museums.

18. *North's Ornithological Notes.*

[Ornithological Notes. By Alfred J. North, C.M.Z.S. Records Austral. Mus. iii. No. 4, p. 85. IV. On a Species of Pigeon frequenting the Atolls of the Ellice Group; V. On the Occurrence of *Butastur teesa* in Australia (*ibid.* p. 87); VI. On a Living Example of *Psephotus chrysopterygius* (*ibid.* p. 87); VII. On the Extension of the Range of *Phaeton candidus* to New South Wales and Lord Howe Island (*ibid.* p. 89).]

Mr. North, as will be seen from the titles given above, continues his ornithological notes on the birds of the Australian Region. The Fruit-Pigeon of Funafuti is stated to be *Globicera pacifica,* and Mr. Gardiner was probably in error in identifying it (Ibis, 1898, p. 45) with *Carpophaga pistrinaria*—a species of the Solomon group. As regards *Psephotus chrysopterygius,* there is now a pair of this beautiful Parrot living in the Zoological Society's Gardens in London, as Mr. North states in a postscript to his note, so that it will not be necessary to go to Sydney to see it. The occurrence of specimens of *Phaethon candidus* on the coast near Sydney and at Lord Howe Island is recorded. In Australia it was previously known to be met with only in the extreme north, and was not included in any of Gould's lists.

19. *Oustalet on the Birds of the Marianne Islands.*

[Les Mammifères et les Oiseaux des Iles Mariannes. Par M. E. Oustalet. Nouv. Arch. d. Mus. sér. 3, nos. 7 & 8. Paris, 1895-96?]

This excellent memoir, which, although issued some time since, has only lately come under our notice, contains a complete account of the birds of the Marianne group, lying in the Pacific, north of the Carolines. Although the Mariannes were visited by the French Expeditions of the 'Uranie' in 1819 and of the 'Astrolabe' in 1828, it is to M. Alfred Marche—a well-known explorer who has previously visited the Gaboon and the Philippines—that the National Museum of France is indebted for its splendid series of the mammals and birds of these islands, upon which the present memoir is principally based. M. Marche passed nearly two years in the various islands, and transmitted home during that period 732 specimens of Mammals and Birds.

After adding to the list the names of the few other species recorded by previous authors, M. Oustalet is thus enabled to register 47 birds as belonging to the avifauna of the Mariannes. Of these he gives us in every case exact and elaborate particulars. The general facies of the Ornis of this group is shown to be essentially Polynesian. About 11 species are peculiar to it, and of these the Meliphagine form *Cleptornis marchei* is even generically different.

A coloured illustration is given of *Ptilotis marchei.*

20. *Oustalet on Birds from Setchuan.*

[Observations sur quelques Oiseaux du Setchuan et description d'espèces nouvelles ou peu connues. Par M. E. Oustalet. Bull. Mus. d'Hist. nat. 1898, p. 221.]

M. Biot, who had previously sent many specimens of birds from Setchuan and Yunnan to Paris, has lately transmitted to the Museum an important series of examples obtained by the members of the Mission at Ta-tsien-lou. M. Oustalet writes specially on eight of them, among which is a very fine new *Calliope* proposed to be called *C. davidi,* and a *Trochalopteron* to be named *T. styani* if it be not the *T. cinereiceps* of Styan.

21. *Oustalet on new Birds from China and Indo-China.*

[Description de cinq Espèces nouvelles d'Oiseaux appartenant au Muséum d'Histoire naturelle et provenant de la Chine et de l'Indo-Chine. Par M. E. Oustalet. Bull. Mus. d'Hist. nat. 1896, no. 7.]

The following new species are described :—*Carpococcyx renauldi* from Annam; *Pitta* (*Hydrornis*) *annamensis* from Annam; *Cryptolopha dejeani* from Ta-tsien-lou in Setchuan; *Gennæus edwardsi* from Annam; and *Arboricola henrici* from Tonkin and Annam. The discovery of new species of *Carpococcyx, Pitta,* and *Gennæus* is of great interest.

22. *Oustalet on Birds from Indo-China.*

[Catalogue des Oiseaux recueillis par M. le Comte de Barthélemy dans le cours de son dernier voyage en Indo-Chine. Par M. E. Oustalet. Bull. Mus. d'Hist. nat. 1898, no. 1.]

This is a list of 69 of the species of birds represented in the collection made by Comte de Barthélemy during his expedition from Tonquin up the Mekong into China, accompanied by field-notes of the collector and exact localities.

23. *Oustalet on the Struthiones.*

[Catalogue sommaire des Oiseaux de l'Ordre des Brevipennes qui figurent dans les galeries du Muséum. Par M. E. Oustalet. Nouv. Arch. du Mus. Paris, sér. 3, viii. p. 261 (1896).]

This is a list of the specimens of Struthiones in the gallery of the Paris Museum. The most remarkable of them is the unique specimen of *Dromæus ater* Vieill. Good coloured figures are given of *Casuarius occipitalis* and *C. laglaizei.*

24. *Oustalet on Birds from British Central Africa.*

[Catalogue des Oiseaux recueillis par M. Foa dans la région des Grands Lacs, immédiatement au nord du Zambèze moyen. Par M. E. Oustalet. Bull. Mus. d'Hist. nat. 1898, no. 2, p. 58.]

The collection of birds recently sent to the Museum d'Histoire Naturelle at Paris by M. Foa, the French explorer, contains specimens which are referred by M. Oustalet to 54 species. Of these a list is given, accompanied by the field-notes of the collector. No exact localities are added, and the "région" stated in the title of the article is rather vague, but we believe that M. Foa's explorations were chiefly in British Central Africa, and the species in the list are mostly the same as those recorded in Capt. Shelley's various papers on the birds of that country.

25. *Pycraft on the Gular Pouch of the Bustard.*

[The Gular Pouch of the Great Bustard (*Otis tarda*). By W. Pycraft. Nat. Sc. xiii. p. 313. Nov. 1898.]

In this article Mr. Pycraft gives a good review of the literature (beginning in 1681!) on the vexed question of the gular pouch of the Great Bustard, and adds his own testimony on the subject, based upon the examination of the fine adult male of this species lately living in the Zoological Society's Gardens. In this specimen there can be no doubt that a pouch existed, and, as will be seen by the full-page figure (p. 321), a very large one.

The bird died in May last in the middle of its period of sexual excitement, of which the gular pouch is manifestly an accompanying phenomenon, possibly developed only during this season, and serving to help the bird to assume the extraordinary attitudes it adopts when courting.

The mounted specimen of the pouch will shortly be exhibited in the Bird-gallery of the British Museum.

26. *Ramsay and North on the Birds of the Australian Museum.*

[Catalogue of the Australian Birds in the Australian Museum, Sydney, N.S.W. Parts I. & II.: Accipitres and Striges. By E. P. Ramsay, LL.D. Second Edition, with Additions, by A. J. North, C.M.Z.S. 8vo. Sydney, 1874–98.]

This is a second edition of the first two parts of the 'Catalogue of Birds in the Australian Museum, Sydney,' which were prepared and published by the late Mr. Ramsay, the former in 1874 and the latter in 1890. The catalogues have been revised and brought up to date by Mr. A. J. North, Ornithologist to the Museum. The Australian Accipitres, treated of in Part I., are 28 in number; the Striges, in Part II., are 16. Full synonymics and descriptions are given of all the species, as also the exact localities of all the specimens in the Museum.

27. *Rothschild's Synopsis of the* Paradiseidæ.

[Das Tierreich. Eine Zusammenstellung und Kennzeichnung der rezenten Tierformen. Herausgegeben von der Deutschen Zoologischen Gesellschaft. Generalredakteur Franz Eilhard Schutze. 2 Lief. Aves. Redakteur A. Reichenow. Paradiseidæ bearbeitet von The Hon. Walter Rothschild. April 1898. 52 pp. Berlin: Friedländer.]

The second part of the 'Aves' of the great German zoological work 'Das Tierreich' contains a synopsis of the Paradiseidæ (in which family are included the Bower-birds, Ptilonorhynchinæ), prepared by Mr. Rothschild, who here gives us an elaborate and completely up-to-date account of one of his favourite groups, of which the Tring Museum contains an almost unrivalled series. We are, however, still of opinion that (for reasons already stated, *vide* 'Ibis,' 1897, p. 440) the diagnoses should have been given in Latin instead of German.

Mr. Rothschild recognizes 78 species of Paradiseidæ, divided into 32 genera. Besides these, a certain number of subspecies are recognized, the typical subspecies of each species being indicated by the adjective "*typicus*" or "*typica*" placed after it, we are pleased to say, and not by the ugly repetition of the specific term, which is sometimes used. As regards generic divisions the author is *not* an extremist,—he does not use such genera as *Astrarchia, Paradisornis, Trichoparadisea,* and *Eucorax,* but at the same time he is sufficiently liberal in this respect. We cannot say that in our opinion he is justified in resuscitating *Falcinellus* and giving it priority to *Epimachus,* as to do so will only lead to confusion between Paradise-birds and Ibises, for the latter of which *Falcinellus* is habitually employed. But then we do not profess or wish to carry priority to its bitter-end—a pastime which some of our friends delight in. We fear also that Mr. De Vis will hardly know his own name when reduced to "Vis." At the same time these are but very slight blemishes in what will be allowed by every ornithologist to be an excellent piece of most useful work.

28. *Seebohm's 'Monograph of the Thrushes'* *.

[A Monograph of the Turdidæ, or Family of Thrushes. By the late Henry Seebohm. Edited and completed (after the Author's death) by R. Bowdler Sharpe, LL.D., F.L.S., &c. Part IV. Imperial 4to. London: Henry Sotheran & Co., 1898.]

In Part IV. of this beautiful monograph, which was issued in October last, the account of the typical *Turdi* (according to Seebohm's views) is continued. We agree with the Editor that *Turdus herminieri* of Guadaloupe and its representatives in the adjacent islands ought not to be included in the genus *Turdus*, though Dr. Stejneger was probably correct in his view that they are Thrushes and not Mock-birds. Dr. Sharpe has elevated all the American subspecies of the "*swainsoni*" group to specific rank, and makes no less than seven species of them. It would be very difficult, in our opinion, to recognize specimens of several of these alleged species unless the localities were attached to them.

The following species are figured in this part:—*Turdus herminieri, T. dominicensis, T. iliacus, T. musicus, T. auritus, T. viscivorus, T. mustelinus, T. fuscescens, T. aliciæ, T. auduboni, T. pilaris, T. jamaicensis.*

29. *Sharpe's 'Monograph of the* Paradiseidæ.'

[Monograph of the *Paradiseidæ*, or Birds of Paradise, and *Ptilonorhynchidæ*, or Bower-birds. By R. Bowdler Sharpe, LL.D., F.L.S., &c. Part VIII. Folio. London: H. Sotheran & Co., 1898.]

This is the closing part of Dr. Bowdler Sharpe's Monograph of the Paradise-birds and Bower-birds, and we congratulate him on bringing these two splendid volumes to so early and so satisfactory a close. The first volume, as completed, treats of 44 species, the second of 52. In his preface, in which the whole subject is reviewed, Dr. Sharpe, although he adopts the Paradiseidæ and the Ptilonorhynchidæ as distinct families, confesses his inability, when taking them in conjunction with the Corvidæ, to separate them by satisfactory characters. In the general arrangement, the Paradiseidæ are taken first and divided into two subfamilies, the

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* *Cf.* 'Ibis,' 1898, p. 623.

Epimachinæ with nine genera, and the *Paradiseinæ* with nineteen genera. In the Bower-birds (Ptilonorhynchidæ) fourteen genera are recognized.

A new genus (*Calastrapia*) is proposed for *Astrapia splendidissima.* We are pleased to see that Dr. Sharpe objects to revive *Falcinellus* in place of *Epimachus*, and that he adheres to the name *speciosus* for the typical species of that genus. The first volume of the monograph contains 39 plates, and the second 40; the number of species recognized is 96, being 18 more than those given by Mr. Rothschild in his recent synopsis of the same group in 'Das Tierreich.'

The following species are figured in the present number:—*Parephephorus duivenbodii, Astrapia splendidissima, Paradisea intermedia, P. decora, Phonygama hunsteini, Manucodia atra, Amblyornis flavifrons, A. inornata, Chlamydodera cerviniventris, C. maculata, C. nuchalis.*

30. *Sharpe and Ogilvie Grant: Catalogue of the Birds in the British Museum.*

[Catalogue of the Plataleæ, Herodiones, Steganopodes, Pygopodes, Alcæ, and Impennes in the Collection of the British Museum.—Plataleæ (Ibises and Spoonbills) and Herodiones (Herons and Storks), by R. Bowdler Sharpe. Steganopodes (Cormorants, Gannets, Frigate-Birds, Tropic-Birds, and Pelicans), Pygopodes (Divers and Grebes), Alcæ (Auks), and Impennes (Penguins), by W. R. Ogilvie Grant. 8vo. London, 1898.]

With the greatest satisfaction all who are engaged in work on ornithological subjects will hail the long-wished-for appearance of the twenty-sixth volume of the Catalogue of Birds, which brings the long series, commenced in 1874, to a conclusion.

The first portion of this volume (328 pp.), containing the Plataleæ and Herodiones, has been composed by Dr. Bowdler Sharpe; the remainder of the work—Steganopodes, Pygopodes, Alcæ, and Impennes (330 pp.)—has been prepared by Mr. Ogilvie Grant.

The Plataleæ described in the present volume are 33 in number, the Herodiones 120, the Steganopodes 68, the Pygopodes 26, the Alcæ 26, and the Impennes 17, so that altogether 290 species (referred to 98 genera) are comprised in this volume. Only 10 out of these species are unrepresented in the British Museum.

There appear to be only four new generic terms introduced for the first time in this volume, namely:—NOTOPHOYX (Sharpe), TIGRORNIS (Sharpe), HETEROCNUS (Sharpe), and MICRURIA (Grant). The new species characterized are *Melanophoyx vinaceigula* Sharpe, *Tigrisoma bahiæ* Sharpe, *Phalacrocorax stewarti* Grant, and *Phaëthon americanus* Grant. The name *Ardea picata*, being preoccupied, is proposed by Dr. Sharpe to be altered to *Notophoyx flavirostris* (see p. 654). The following species are figured:—*Phoyx manillensis, Melanophoyx vinaceigula, Notophoyx aruensis, Nyctanassa pauper, Butorides spodiogaster, Tigrisoma bahiæ, Dupetor nesophilus, D. melas, Erythrophoyx woodfordi, E. prætermissa, Phalacrocorax stewarti, Pelecanus thagus, Phaëthon indicus, Tachybaptes capensis,* and *T. albipennis.*

We append (p. 151) a list of the 27 volumes of the "Great Catalogue of Birds," showing their contents, authors, dates, and the numbers of the genera and species treated of in each of them.

It will be observed that the total number of species of birds regarded as valid in the 27 volumes is 11,617.

31. *Vorderman on Birds from the Moluccas.*

[Molukken-Vogels. Door A. G. Vorderman. Natuurk. Tijds. Nederl. Indië, lviii. Afl. 2, p. 169.]

The author gives an account of a collection made for him by his hunters in the Moluccas—Ternate, Batchian, Halmaheira, Ceram, Bourou, Amboina, Banda, and some other islands. Among the 109 species to which the specimens are referred, one—*Chalcococcyx nieuwenhuisi*, from Gani, on the south-west coast of Halmaheira—is described as new.

32. *Vorderman on* Lophura nobilis.

[*Lophura nobilis*, Sclat., de Fazant van Bangka. Door A. G. Vorderman. Natuurk. Tijds. Nederl. Indië, lviii. Afl. 2.]

Herr Vorderman shows that the representative of the

Catalogue of Birds in the British Museum.

Vol.	Contents.	Author.	Date.	No. of Genera.	No. of Species.
I.	Accipitres	R. B. Sharpe.	1874	80	389
II.	Striges	R. B. Sharpe.	1875	19	190
III.	Coliomorphæ	R. B. Sharpe.	1877	94	370
IV.	Cichlomorphæ, Pt. I.	R. B. Sharpe.	1879	81	520
V.	Cichlomorphæ, Pt. II.	H. Seebohm.	1881	18	344
VI.	Cichlomorphæ, Pt. III.	R. B. Sharpe.	1881	66	407
VII.	Cichlomorphæ, Pt. IV.	R. B. Sharpe.	1883	164	687
VIII.	Cichlomorphæ, Pt. V., and Certhiomorphæ	Hans Gadow.	1883	46	402
IX.	Cinnyrimorphæ	Hans Gadow.	1884	35	355
X.	Fringilliformes, Pt. I.	R. B. Sharpe.	1885	63	448
XI.	Fringilliformes, Pt. II.	P. L. Sclater.	1886	100	575
XII.	Fringilliformes, Pt. III.	R. B. Sharpe.	1888	101	559
XIII.	Sturniformes	R. B. Sharpe.	1890	129	601
XIV.	Oligomyodæ	P. L. Sclater.	1888	142	665
XV.	Tracheophonæ	P. L. Sclater.	1890	92	531
XVI.	Upupæ and Trochili Coraciæ	O. Salvin. E. Hartert.	1892	163	687
XVII.	Coraciæ (*continued*) and Halcyones Bucerotes and Trogones	R. B. Sharpe. W. R. Ogilvie Grant.	1892	67	397
XVIII.	Scansores	E. Hargitt.	1890	50	385
XIX.	Scansores and Coccyges	P. L. Sclater and G. E. Shelley.	1891	87	448
XX.	Psittaci	T. Salvadori	1891	79	499
XXI.	Columbæ	T. Salvadori	1893	68	415
XXII.	Pterocletes, Gallinæ, Opisthocomi, Hemipodii	W. R. Ogilvie Grant.	1893	94	426
XXIII.	Fulicariæ and Alectorides	R. B. Sharpe.	1894	88	252
XXIV.	Limicolæ	R. B. Sharpe.	1896	102	255
XXV.	Gaviæ Tubinares	H. Saunders. O. Salvin.	1896	46	224
XXVI.	Plataleæ, Herodiones, Steganopodes, Pygopodes, Alcæ, and Impennes	R. B. Sharpe and W. R. Ogilvie Grant.	1898	98	290
XXVII.	Chenomorphæ, Crypturi, and Ratitæ	T. Salvadori.	1895	83	296
				2255	11,617

Pheasants of the genus *Lophura* in Bangka is *L. nobilis*—the same as the Bornean species. (*Cf.* Büttikofer, Notes Leyd. Mus. vol. xvii. p. 175.)

33. *Winge on the Birds of the Danish Lighthouses*, 1897.

[Fuglene ved de danske Fyr i 1897. 15de Aarsberetning on danske Fugle. Ved Herluf Winge. Vid. Meddel. fra d. naturh. i Kbhn. 1898, p. 431.]

Mr. Winge's report on the birds obtained and observed at the Danish lighthouses in 1897 is drawn up on the methodical plan adopted in former papers on this subject (*cf.* 'Ibis,' 1897, p. 624). In 1897, 611 specimens of 59 different species were forwarded from 30 lighthouses to the Zoological Museum of Copenhagen. The report contains full particulars as to the dates and modes of their occurrence. The species most numerously represented at the lighthouses in 1897 were the Skylark, *Alauda arvensis* (over 300 examples), and the Song-Thrush, *Turdus musicus* (193 examples).

XI.—*Letters, Extracts, Notices, &c.*

We have received the following letters, addressed "to the Editors of 'The Ibis'":—

Sirs,—It may be of some interest to your readers to learn that a male of *Sasia everetti* was captured by my Dyak collector some weeks ago. As this example differs in some particulars from the figure and description of a specimen, which is probably a female, published in the Cat. B. M. vol. xviii. p. 559, I append a short account of it:—

Above olive, very dark on the crown; rump and scapulars tipped with orange-rufous; chin, malar region, nasal plumes, and throat orange-rufous; breast dusky olive, with a few orange-rufous feathers admixed, increased in number on the belly, where they almost entirely conceal the dusky olive wing- and tail-coverts, as in female. Total length (in millimetres) 80; culmen 11; wing 51; tarsus 13; toes—outer anterior 11, inner anterior 6, posterior 11·5.

That this is an adult specimen is proved by the fact that it was taken in its nest, where it was sitting on an egg. The egg is pure white. The nest was in a hole of a tree. I determined the sex of the specimen myself, and can vouch for its correctness.

Yours &c.,
R. Shelford.
Curator of the Sarawak Museum.

The Museum, Sarawak,
July 27th, 1898.

Sirs,—Those readers of 'The Ibis' who were present at a recent Meeting of the Congress of Zoology, whereat the ornithological work of William Turner was produced, may care to further acquaint themselves, if they have not already done so, with that excellent man. The small octavo volume which creates an interest in him in every naturalist bears on its titlepage the following inscription:—

"Avivm | præcipv | arvm, qvarvm | apvd Plinivm et Ari- | stotelem mentio est, breuis & | succincta historia. | Ex optimis quibusque scripto- | ribus contexta, scholio illu | strata & aucta. | Adiectis nominibus Græcis, Germanicis & | Britannicis. | Per Dn. Guilielmum Turnerum, artium & Me- | dicinæ doctorem. | Coloniæ excudebat Ioan. Gymnicus, | Anno M.D.XLIIII [vol. unic., 8°., s. pp. n.]."

Starting at the titlepage and calling this number 1, the last printed page will be 157. The contents are disposed as follows:—The "Epistola nuncupatoria" occupies pp. 3–14, and is dated "Coloniæ 5. Idus Februarii, Anno M.D.XLIIII." Pp. 15–146 are devoted to the regular text, the head-line of each page consisting of the words "de avibus." This is followed by "Avium loci communes ex Aristotele," pp. 147, 148; the "Peroratio ad lectorem," pp. 149–153, dated "Coloniæ Calend. Martiis"; complimentary verses in Greek and Latin, pp. 154–156; and the twelve "Errata," to which the last page is devoted. The volume is dedicated to Edward, Prince of Wales, afterwards Edward VI.*

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* For the privilege of examining a copy of this volume I am indebted to the kindness of Professor Alfred Newton.

William Turner, naturalist, physician, and divine, was born about the year 1500, at Morpeth, in Northumberland. He was educated under the patronage of Thomas Wentworth, and became a member, and afterwards a Fellow, of Pembroke Hall. He graduated as Bachelor of Arts in 1829–30, and was admitted to deacon's orders about 1536. At Cambridge Turner early evinced an inclination to the study of plants, and complained bitterly that he "could learn never one Greke, neither Latin, nor English name, even amongst the physicians, of any herbe or tree." In the prosecution of this study he was led to an acquaintance with other departments of natural history, and his knowledge of the birds and fishes of this country was both intimate and exact. On quitting Cambridge Turner, "agreeably to the practice of many others, united the character of the divine with that of physician." He felt constrained to embrace the principles of the Reformers, and his zeal evoked the displeasure of Bishop Gardiner, who caused him to be thrown into prison. On being released he submitted to voluntary exile during the reign of Henry VIII., and resided at various towns in Holland, Germany, Switzerland, and Italy. At Ferrara he received the degree of Doctor of Physic. At Zurich he met the celebrated Conrad Gesner, and between the two a warm friendship sprang up. From Cologne he issued his commentary upon the birds mentioned by Pliny and Aristotle, the title of which is printed above. In the same year he also caused to be printed the 'Dialogus de Avibus' of Gybertus Longolius or Longueil (*nat.* 1507, *ob.* 1543), physician to Hermann, Archbishop of Cologne, to whom Turner dedicated the work. On the accession of Edward VI. he returned to England and was appointed physician to the Lord Protector, and Dean of Wells. During the next reign he again resided abroad, but Elizabeth reinstated him in his preferments, and to her he dedicated the complete edition of his 'Herbal' in 1568, acknowledging with gratitude her favours in protecting him from manifold troubles.

Turner died at Crutched Friars on the 7th of July, 1568, and was buried in the chancel of St. Olave's Church, Hart Street, where may be seen a monument erected to his memory by his widow.

Yours &c.,
W. Ruskin Butterfield,

St. Leonard's-on-Sea,
September 6th, 1898.

Sirs,—May I point out that in the footnote to La Touche's paper on North-Formosa birds ('Ibis,' 1898, p. 356), you say of "Botel Tobago" "it appears to be what is called in Johnston's Royal Atlas 'Bashee Island'"? This is an error: Bashee Island is about 100 miles south of Botel Tobago. They are divided by the Bashee Channel, which I believe is deep water.

Next week I shall send off three collectors up the coast to Funing, and thence to Pucheng, in the extreme north of this province; from that place they will strike across to the mountains north of Kuatun, and return by the river. It will be a two-and-a-half months' business. In December I hope to go to Ching Feng again. In the spring I expect to send my men away for a long expedition, viz. down the coast to Swatow, thence by the "Han" River to Ting Chow, and back by one of the south-westerly branches of the "Min." When this is done I think we shall have a very fair idea of the avifauna of Fohkien.

Yours &c.,
C. B. Rickett.

Foo Chow,
September 15th, 1898.

Sirs,—It may interest our brethren of the B. O. U. to learn that a specimen of *Anthus richardi* was winged on Edderside Moss, near Allonby, on Oct. 10th, by Mr. Tom Williamson, who took it alive to his uncles, Messrs. Mann of Aigle Gill. I identified the specimen on the following day, when it appeared to be doing well; but it died from its gunshot-wound three days later. No other specimens of this large Pipit were seen until the 9th of November, when

Mr. Joseph Mann made a close scrutiny of a second and larger specimen, which was running on a field on the farm. While he was fetching his brother, Tom Mann, to shoot the strange bird, it made its escape. The brothers searched unsuccessfully for the Pipit; but, in a lower part of the same field, they discovered, and shot, the only Black Redstart (*Ruticilla titys*) that they have ever seen in life. On examining it, I found it to be an immature bird.

Yours &c.,

H. A. Macpherson.

Allonby Vicarage, Cumberland,
November 14th, 1898.

Sirs,—In the month of September of this year, on the Lake of Garda, was observed a conspicuous arrival of Skuas. They appeared in a flock of about 40 individuals, and, after having spent all the month on the waters of the Garda, they disappeared in the first days of last October. They frequented the coast along and opposite to Lugana, Bardolino, Tromba di Corno, Lazise, and Sermione. Count Fratta Pasini, who possesses a very nice castle near the smiling Lazise, told me that he met with them many times; they were very tame, noisy and cheerful; they approached very near the fishing-boats, so that it would have been a very easy thing to kill the whole flock. About ten specimens were taken; six of them are now in my collection, another in that of Prof. Garbini of Verona, the others were eaten (but not found good!). All were caught, except that of Mr. Garbini, by Count Fratta's wildfowl-shooter, Nicholas Azzale. He told me that if he had wished he could have killed the whole flock, because they flew so near his swivel-canoe that he could easily have shot several of them with a simple two-barrelled gun. But as he was ignorant of any interest which these birds offered to the naturalist, he killed only a few specimens, in order to show them to his master, Count Fratta. They generally flew slowly all the day upon the waters of the lake, and were rarely observed to rest. They fished continually, and pounced upon small fishes, which they carried off, after making many cries like *haack, haack,* and slowly wheeling into the air.

In the stomach of five Skuas that have been examined were found remains of the following fishes—*Cottus gobio, Esox lucius,* and *Gobio fluviatilis,* and in two specimens also remains of worms; not a strange thing, because one knows that Seebohm noticed that some specimens obtained by him had been feeding upon beetles and cranberries, so that the food of this bird is very varied.

The specimens of which I am speaking all belong to *Stercorarius parasiticus* (Linn.), or Buffon's Skua; they are young birds of the year, some of a nearly sooty brown, less dark on the underparts, lightly striated on the flanks and tail-coverts; some are, however, whitish towards the belly and vent. Regarding the shafts of the primaries, they have only the two outer ones on each side white and the others dark, while in the *S. crepidatus,* or Richardson's Skua, all the shafts are white-coloured; besides, as Col. Irby rightly observes, the nostrils of Buffon's Skua are nearer the frontal feathers than the tip of the bill, the contrary being the case in Richardson's Skua. Finally our specimens are less in stature and darker than Richardson's Skuas.

Regarding the geographical distribution of the *Stercorarii* in Italy, I can say that the species which more or less rarely occur in our region are four, viz.:—

(*a*) *Stercorarius catarrhactes,* or Great Skua, which is the rarest, only one specimen being known, which is preserved in the Museum of Florence, obtained in the Province of Verona, October 1882.

(*b*) *Stercorarius pomatorhinus,* or Pomatorhine Skua, which is uncommon; though widely distributed in Italy; it is generally killed in summer and autumn, less frequently in winter, and the specimens are usually young. I have in my collection two young and an adult female.

(*c*) *Stercorarius crepidatus,* or Richardson's Skua, a rare species, perhaps rarer than *S. pomatorhinus* and *S. parasiticus*; however, it has been killed in many parts of Italy and in every season, but, if my information is right, in the colder months only. I have four specimens in my collection, of which two are adults.

(*d*) *Stercorarius parasiticus,* or Buffon's Skua, more rare than *S. pomatorhinus* and less so than the preceding, with which, I think, it is easily confounded. It occurs in autumn and winter. I have eight specimens in my collection, all young ones, killed from September to December; and with the exception of an adult preserved in the Rizza Collection at Siracusa, in Sicily, no adult specimen has occurred in Italy.

According to my belief, all the species of *Stercorarius* are stragglers and rare in Italy.

Yours &c.,

E. Arrigoni degli Oddi.

Ca' Oddo (Monselice-Padova),
November 12th, 1898.

Sirs,—In 1893 I received from Mr. Patrick Cullen, Master of the Blackwater Bank Lightship, county Wexford, the leg and wing of a bird killed by striking the lantern on the night of the 16th of August. The wing had a close superficial resemblance to that of an immature Wheatear, though the remarkably thick and scutellated tarsus was totally unlike a Wheatear's. The leg and wing remained in my collection until, in the course of preparing the Migration Report for 1893, it became necessary to set the question beyond doubt. I then sent the leg and wing for identification to Mr. Howard Saunders, who recognized them as belonging to the Woodchat Shrike, *Lanius pomeranus,* and returned them to me, at the same time remarking the strong superficial resemblance of the wing to that of a young Wheatear. He also sent to me for comparison a young male from his collection, obtained at Seville on July 9th, 1869, and the wings and legs of the two agree exactly.

This is the only known instance of the occurrence of the Woodchat in Ireland; and, having regard to the distribution of the species in Europe, its occurrence at an Irish lightship at the commencement of the autumnal migration is abnormal.

Lanius pomeranus is the sixth species which has earned a place in the Irish list by striking the lantern of one of our light-stations, and it is perhaps worthy of note that all six have occurred only at lightships or island-stations situated at distances of from six to nine miles off-shore. The Tearaght Rock, nine miles west of Kerry, has contributed *Sylvia curruca* and *Phylloscopus superciliosus*; the Fastnet, eight miles south of Cork, *Calcarius lapponicus*; Blackrock, co. Mayo, nine miles from shore, *Alauda brachydactyla*; Arklow South Lightship, seven miles east of Wexford, *Muscicapa parva* (of which three additional specimens have since been obtained, all at island-stations or lightships); and Blackwater Bank Lightship, six miles distant from the same county, has yielded *Lanius pomeranus*. All these birds have occurred during the autumn migration, and nearly all in October.

To these six may be added two species of which specimens have been shot by lighthouse-keepers:—The Antarctic Sheathbill, *Chionis alba*, at Carlingford, and several specimens of a Mealy Redpoll from the Tearaght Rock, named by Dr. Sharpe *Linota rostrata*.

Yours &c.,
Richard M. Barrington.

Fassaroe, Bray,
November 25th, 1898.

Sirs,—With reference to the remarks by Mr. H. J. Pearson and Mr. H. L. Popham on the northern range of *Motacilla alba* and *Falco æsalon*, will you allow me to say that in the 'Zoologist' for 1896 (pp. 418, 452) I have recorded meeting with White Wagtails on Tromsö, and Merlins on the opposite mainland, in June of that year? Both species were breeding. I saw a Merlin sitting on her nest (an old Crow's nest, I believe) in a birch-tree in the Tromsdal, and a pair of White Wagtails on Tromsö were in a state of great excitement and were carrying food. I could not, however, attempt to find the nest, as it was evidently somewhere in private grounds close to a dwelling-house.

Yours &c.,
O. V. Aplin.

Bloxham, Oxon,
Nov. 26th 1898.

Sirs,—On the 28th November I obtained a specimen of the Barred Warbler (*Sylvia nisoria*) at Bloxham. The weather had for some days beenv ery inclement, with strong winds from S.E., and five inches of snow on the ground on the 23rd. Thebird looked very miserable and dejected, and would not, I think, have survived a spell of severe frost. When I first saw it, it was feeding on the watery berries of the asparagus, which are almost, if not entirely, untouched by our native birds. After flying into a shrubbery, it returned to the asparagus. The bird-stuffer who preserved the bird sent me the contents of its stomach, which consisted of merely the seeds and the remains of a few of these berries. Its weight was barely one ounce. It proved to be a male (bird-stuffer's report), and is in immature plumage; the under parts are of a plain greyish tint, suffused on the breast and lower belly with buff, and the characteristic crescentic markings of the adult are wanting. The bright edges of the wing-coverts are, however, conspicuous; the flanks are obscurely barred; the under tail-coverts have dark centres; the rump is slightly barred, and the sides of the neck obscurely so. The general colour of the upper parts is ash-grey. It may be worth while stating that, when seen at a little distance in life, the Barred Warbler looks like a plain grey-coloured bird. Its flight is heavy, and the wings in flight are somewhat depressed. This specimen measured 6·7 inches in total length; wing 3·4 inches. Pupil large; iris rather narrow, of a pale clay-brown; bill pale horn-colour, darker and browner at the tip and along the culmen; tarsi and toes strong, of a light lead-grey colour.

This specimen (the sixteenth procured in these islands) has some claim to especial interest. The original British-killed example, procured at Cambridge many years ago, and the bird now recorded, are the only specimens which have been obtained in one of our inland counties, and the present bird had wandered further inland than any of the other Barred Warblers which have straggled to our shores. Of the sixteen recorded British examples, five have been procured in East Yorkshire and Lincolnshire, five in Norfolk, two in Scotland, two in

Ireland, one in Cambridgeshire, and one in Oxon. The last mentioned also occurred fifteen days later in the autumn than any of the others. Of the fifteen (*i. e.* leaving out the Cambridgeshire bird), the exact date of the capture of which is known, four have occurred in August, eight in September, one in October, and two in November.

Yours &c.,
O. V. APLIN.

Bloxham, Oxon,
30th November, 1898.

The Bird-Collections of the British Museum.—We extract from the Parliamentary Report on the British Museum for 1897–8, which was issued last autumn, the principal portions relating to the National Collection of Birds. The report informs us that the total number of additions to the group of Aves in 1897–8 was 12,783, of which the following are specially mentioned :—Twenty-two birds from the Shan States, presented by Major Rippon. A skeleton of *Pelecanus crispus*, presented by the Director of the Royal Botanic Gardens, Kew. A specimen of Peale's Peregrine Falcon (*Falco pealii*) from the Aleutian Islands, and of the Seychelles Scops Owl (*Gymnoscops insularis*), from the Seychelles, presented by Capt. Ashburnham, 60th Rifles. 35 skins and eggs of birds from Spitsbergen, presented by A. Trevor-Battye, Esq. Nests with pairs of birds of the following species :—*Dicæum cinereigulare, Eudrepanis pulcherrima*, and *Rhipidura cyaniceps*, from the Philippine Islands, presented by John Whitehead, Esq. 25 Ducks and Geese from Walcheren, Holland, presented by T. M. Pike and W. L. Popham, Esqrs. 31 birds from Mozambique, presented by W. A. Churchill, Esq. 24 specimens of Esculent Swifts (*Collocalia*), with their nests and eggs, presented by C. Hose, Esq. Three Willow-Grouse from Unalaska, presented by Prof. D'Arcy Thompson, C.B. Ten types of new species from Uganda and Kikuyu, presented by F. J. Jackson, Esq., Assistant Commissioner of Uganda. Two specimens of *Paramythia montium*, De Vis, and a specimen of *Daphœnositta miranda*, De Vis, from South-eastern

New Guinea, presented by Sir William Macgregor, K.C.M.G., Governor of British New Guinea. Skeletons of birds from Dr. Forsyth Major's expedition to Madagascar, presented by the Royal Society. 586 specimens of birds from the Philippine Islands, collected by Mr. John Whitehead, containing 67 types of new species and examples of 68 species new to the collection, presented by the subscribers to the Whitehead Expedition. 29 specimens from Lagos, presented by Major Ewart. 116 specimens of Herons, Wading-birds, Goatsuckers, and Birds of Prey, including the types of the new genus of Eagles (*Pithecophaga jefferyi*) and of the Small-billed Frog-mouth (*Batrachostomus microrhynchus*), collected by Mr. John Whitehead, purchased. A specimen of a new Siberian Goose (*Anser neglectus*, Sushkin), presented by Professor M. Menzbier. 378 specimens of birds from North Nyasa-land, collected by Mr. Alexander Whyte, including the types of two new species (*Bessonornis modesta* and *Cisticola nigriloris*), presented by Sir Harry Johnston, K.C.B. 157 specimens, mostly Humming-birds, from Ecuador, presented by L. Söderström. 224 specimens of birds and 565 eggs from the Argentine Republic (including the type of *Hapalocercus hollandi*), collected by Mr. Arthur H. Holland, purchased. 14 birds received in exchange from the Hon. Walter Rothschild, including examples of seven species new to the collection. 18 birds, presented by J. Davidson, Esq., from Aden, collected by the late Lieut. H. E. Barnes. The types of Williams's Silver Pheasant (*Gennæus williamsi*) from the Chin Hills, presented by Capt. F. T. Williams. 117 birds from Northern Norway, collected by Mr. Nicolai Hanson, purchased. 17 specimens of birds from the Cape Verde Islands, including the types of *Spizocorys razæ* and *Puffinus mariæ*, presented by Boyd Alexander, Esq. 26 specimens from the Loria collection, including examples of nine species new to the British Museum, purchased. 72 skins of birds from Siam, collected by Stanley S. Flower, Esq., Director of the Royal Siamese Museum, Bangkok, received in exchange. 3 specimens of birds from the Eastern Soudan, including the type of *Ammoperdix cholmleyi,* presented by A. J. Cholmley, Esq. A specimen of *Idiopsar brachyurus,* an aberrant genus of Finches from Bolivia, and 6 Parrots from German New Guinea, presented by Graf von Berlepsch. 81 specimens of birds from the Sandwich Islands, including specimens of 3 species new to the collection, presented by the Joint Committee of the Royal Society and British Association. 136 birds from the islands of Lombok and Savu, collected by Mr. Everett, containing examples of six species new to the collection, purchased. 47 birds from the province of Foochow, China, including the type of *Yuhina pallida,* presented by C. B. Rickett and J. La Touche, Esqrs. 135 specimens from Northern Celebes, collected by Charles Hose, Esq., including the type of *Dicæum hosii,* and examples of 8 species new to the collection, purchased. 34 specimens from Christmas Island in the Indian Ocean, collected by Mr. C. W. Andrews, presented by Dr. John Murray, F.R.S.; and 72 eggs of Philippine birds collected by Mr. John Whitehead, purchased.

The Report also specially mentions the receipt of a fine collection of birds from Gilgit, consisting of 3386 skins referable to about 250 species, presented by Col. John Biddulph, and of a series of valuable specimens of Natural History, including many birds, collected in British East Africa, and presented by Mr. S. L. Hinde, Resident Medical Officer at Machako's.

The Diving-habits of the Young Hoatzin.—In 'The Ibis' for 1890, p. 327, in a paper on the habits of the Hoatzin (*Opisthocomus cristatus*), the writer made a casual note on the peculiar diving-power of a young nestling which had fallen, or had been shaken, into the water. At each attempt to seize it, the little bird had dived and swum away rapidly by means of its legs and featherless wings, the latter being used as a sort of flippers; and it being impossible to trace its course in the very dark and dirty water of the Lower Berbice river where the incident took place, the little creature eventually succeeded in getting out of reach or pursuit among the spiny growth of the Bunduri Pimpler (*Drepanocarpus lunatus*), which the birds chiefly frequent. The incident was the more curious in that the Hoatzin is never seen on the ground or in the water, and the nestlings cling on so tightly and strongly to the branches and twigs, by means of their feet, wings, and beak, that it is hardly possible that they can ever fall off. Even when the attempt is made to knock them down, it is by no means an easy task among the closely-crowded and interlacing twigs and branches.

In ornithological circles this matter seems to have excited a considerable amount of interest, if not of doubt, and the writer has taken steps on every possible occasion since, wherever the nestlings were met with, to verify the incident, the first time accompanied by Mr. C. A. Lloyd, with whose name the readers of 'Timehri' are quite familiar. On every occasion the experiment has had the same termination, nor has it ever been possible, without special appliances, to secure the little bird alive and uninjured after it has once been shaken down into the dark water. The diving is rapid and clean, and the distance dived often several yards, sometimes with the current and sometimes against it. If left alone, the little bird either floats on the water or hooks itself up on to some twig, and perches like a Kingfisher, immediately plunging off like a Darter when closely approached. If the water were clear, it would no doubt be easy to trace its course and secure it as it rises, but under the conditions where it lives the little creature is secure.

That this power or habit is due to some instructive survival from an earlier mode of life in past ages of development can hardly be doubted.—J. J. Quelch in 'Timehri,' n. s. xii. p. 37 (1898).

Sales of Gould's Bird-books.—The occasions on which an original subscriber's copy of the complete set of John Gould's ornithological works comes under the hammer are exceedingly rare. Last week, however, says 'The Athenæum,' such a series occurred at the sale of the library of the late

Edmund Coulthurst, of Streatham Lodge, Lower Streatham. Of the forty-four volumes, thirty-six were bound in green morocco, and the remainder were in parts. The series comprised the following:—'Birds of Australia' and supplement; 'Birds of Europe'; 'Birds of Great Britain'; 'Mammals of Australia'; 'Trochilidæ,' or Humming-birds, with supplement; 'Birds of the Himalayan Mountains'; monographs of the Odontophorinæ, or Partridges of America; of the Rhamphastidæ, or family of Toucans; of the Trogonidæ, or family of Trogons; and of the Macropodidæ, or Kangaroos; 'Birds of Asia,' and the 'Birds of New Guinea.' The prices of all these works at auction vary from time to time, but during the past two or three seasons a set of ordinary copies (that is to say, not of the original subscribers' edition) have realized an aggregate of rather more than £373. The published price of a set, including second editions, is now about £670. Mr. Coulthurst's very fine set realized the total amount of £430.

Capture of a fourth Living Specimen of Notornis.—All ornithologists will be interested to hear of the capture of another living example of *Notornis mantelli* (or, if we are to follow Dr. Meyer, *N. hochstetteri*) in New Zealand. This is only the fourth during a period of fifty years, so that it may be safely assumed that the species is verging on extinction. The first two specimens (obtained by Mr. Walter Mantell in 1848) are in the British Museum. The third specimen (captured by a party of rabbiters on Bare-patch Plain, near Lake Te Anau, thirty years later) is in the Royal Museum at Dresden. The fourth (a young female in beautiful glossy plumage) was killed by a dog on the western shore of Lake Te Anau in the early part of August last. It was immediately forwarded to Dunedin, and was most successfully mounted by Mr. Jennings, the taxidermist to the Otago Museum, the attitude being copied from the plate by Keulemans in Sir Walter Buller's 'Birds of New Zealand.' The capture was effected in the most matter-of-fact way. As Mr. Ross (brother of the Milford Sound guide of that name) was strolling along the shores of the lake, his dog bounded into the low scrub and came out again bearing a *Notornis,* having killed the bird with a sharp nip on the breast. As a specimen it was quite unharmed, and the skeleton (as well as the skin) has been carefully preserved. The incident has excited great interest in the colony, and Dr. Young of Invercargill, who has the custody of the bird, has received many offers for it. A day or two after the capture he was offered a hundred guineas for it; then an offer of two hundred guineas was cabled from London; following close upon this was an offer of £250, and finally a local offer of £300. The owners have decided not to sell at present, and if hereafter they should part with it the sale will be conditional on its not leaving the colony. A question was asked about it in the local Parliament, and the Premier announced that he was prepared to acquire it for the public. There is every probability, therefore, of the Colonial Museum becoming its final resting-place.—W. L. Buller.

Proposed Memorial to Macgillivray.—A Committee has been formed with the worthy object of erecting a Memorial at the grave of the well-known ornithologist William Macgillivray, formerly Professor of Natural History in Marischal College, Aberdeen, whose burial-place in New Calton Burying Ground, Edinburgh, is at present "not marked even by an ordinary tombstone." It is also proposed to found a "Macgillivray Gold Medal" in the University of Aberdeen as a prize for students in Natural History. For these purposes it is estimated that a sum of £250 would be sufficient. The Secretary and Treasurer of the Committee is the Rev. Dr. Farquharson, Selkirk, N.B., to whom subscriptions may be sent, and from whom further particulars may be obtained.

The Generic Name of the Snow-Bunting.—In order to please the advocates of stern priority, the generic name of the Snow-Bunting has been recently changed from *Plectrophanes* to *Plectrophenax,* because it has been shown by Dr. Stejneger that the term *Plectrophanes* was originally based upon the Lapland Bunting, *Calcarius lapponicus*. Mr. Ridgway ('Auk,' xv. p. 324) now wishes to alter it again to *Passerina*, upon the plea that Vieillot assigned three types to that genus, and that, the two former of these having become types of other genera (*Cyanospiza* and *Dolichonyx*), the name *Passerina* must revert to the third type named by Vieillot, *i. e.* to *Emberiza nivalis*. We should rather hold that *Passerina* is void for ambiguity, and that it is better to use *Cyanospiza*, *Dolichonyx*, and *Plectrophenax* for its three component elements respectively. We do not quite agree to the doctrine of "elimination" as put into practice by our American friends.

The Egg of Pityriasis gymnocephala.—In October 1895 Mr. G. Bartlett, the former curator of the Sarawak Museum, obtained a female specimen of this bird, the oviduct of which contained, ready for extrusion, an egg in rather a fragmentary condition; great care was taken in piecing the loose fragments together, with the result of producing a fairly presentable specimen.

The egg is pure white, irregularly and sparingly blotched with brown and slaty blue, the blotches being more numerous on the upper half and forming an irregular ring on the large end of the egg. Size (approximately) 32 × 23 millim.

The eggs of the Laniidæ are not unlike that of *Pityriasis*, but in the absence of knowledge of the anatomy and nesting-habits of the bird it is hazardous to use oology as a means whereby to trace affinities. My own dissections of the bird, so far as they have gone, seem to show some affinities with *Eulabes*, but I hope to publish shortly a full account of its anatomy, and till then will defer all remarks on the subject.

Mr. C. Hose ('Ibis,' July 1893, p. 394) states that the nest of this species is made in natural hollows of trees, and he describes the egg as pale blue, but does so purely from memory, as he confesses; it is not impossible that he described the nest also from memory, but in any case further and fuller evidence is much needed.—R. Shelford.

XII.—*Obituary.*

Mr. William Borrer *and* Mr. J. Van Voorst.

Mr. William Borrer, of Brook Hill, Cowfold, Horsham, who died at a ripe age on the 22nd of October, 1898, was one of the old school of British ornithologists. He was educated at St. Peter's College, Cambridge (B.A. 1838, M.A. 1841), and even in his undergraduate days he took a keen interest in natural history. The continuance of this taste may be seen by the frequent mention of his name in the works of Knox, Gould, Yarrell, and others, as well as in the pages of 'The Zoologist.' His *magnum opus* is 'The Birds of Sussex,' a very interesting volume—with a coloured plate of his great treasure, the Gyr-Falcon — published in 1891. He was elected to the B. O. U. in 1878. In private life he was a most estimable and genial man.

John Van Voorst.—Although Mr. Van Voorst was not a member of the British Ornithologists' Union, the death of the publisher of 'The Ibis,' since its first appearance in 1859, must not pass unnoticed by us. Mr. Van Voorst, who was of Dutch descent, was born in 1804, and was therefore in his ninety-fifth year at the time of his decease, on the 24th of July last. As a publisher of works of high class on various branches of natural history he was without a rival; and, in our special line, it is hardly necessary to mention the classic editions of Yarrell's 'British Birds'; while Hewitson's 'Eggs of British Birds,' Knox's 'Birds of Sussex' and 'Game-birds and Wild-fowl,' did much to stimulate a taste for ornithology and oology in bygone days. The later works he published need not be enumerated. Van Voorst retired from business in 1886, but he retained his interest in old friends and old topics until within the last few months of his life.

THE IBIS.

SEVENTH SERIES.

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XIII.—*Notes on the Birds of North-west Fohkien*[*].

By J. D. D. La Touche.

Monsieur l'Abbé Armand David was the first naturalist to visit Kuatun, a hamlet situated in the Bohea Mountains in the N.W. of Fohkien. He spent 52 days (from the 10th of October to the 1st of December, 1873) in that interesting locality, and, although prostrated by sickness during the greater part of his stay, managed to make extensive and valuable collections of the fauna of N.W. Fohkien. The most notable of his discoveries were the curious *Typhlomys cinereus*; the huge rat *Mus edwardsi*, and another large rat lately described under the name of *Mus latouchii*; and the three beautiful birds, *Ianthocincla berthemyi*, *Pomatorhinus swinhoii*, and *Trochalopteron milni*. He also re-discovered Cabot's Tragopan, now known to inhabit the high wooded mountains of N.W. Fohkien.

Since Père David's time no attempt had been made to explore the Bohea Mountains until November 1895, when Mr. Rickett and I, thinking Kuatun might be reached from Foochow, sent our collector Wang Wang, with some of his family, on an expedition up the river, instructing him to get to Kuatun if possible. The results of this trial trip were satisfactory. In the following April, Wang Wang, with another collector, Chunkai, started again for Kuatun and came back in June, after a month's stay in the mountains. This time the collection was so good, and the novelties proved so interesting, that a third expedition in the autumn of 1896 and a fourth in the spring of 1897 were sent, with equally successful results. To verify the statements of our men, and to complete, as much as possible, the exploration of the Kuatun Mountains, a fifth expedition was arranged. This time my wife, myself, the two collectors Wang Wang and Chunkai, and a trustworthy and faithful Chinese servant composed the party. Our plan was to go up the

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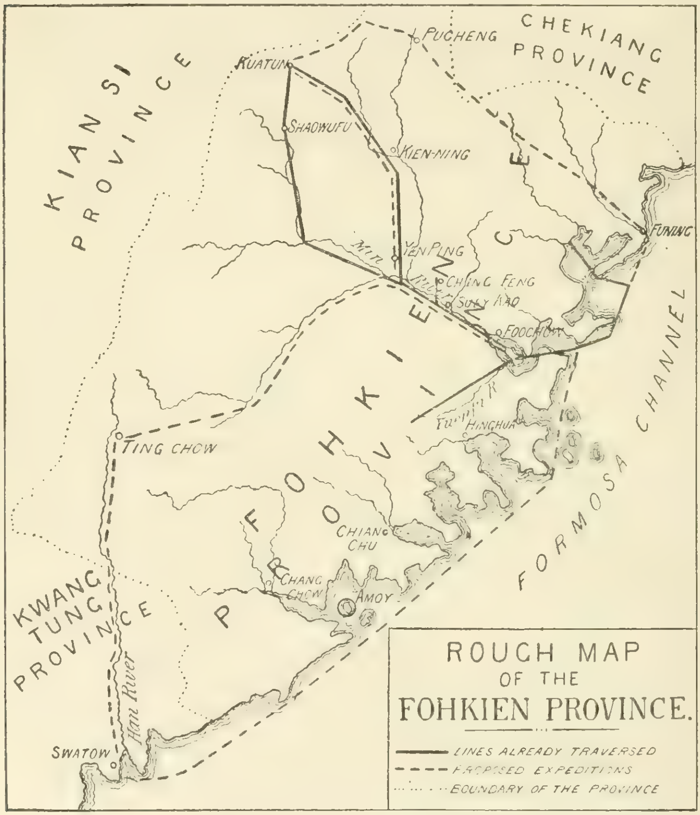
[*] For former papers on this subject see Ibis, 1892, pp. 400-430 477 503; 1894, pp. 215-226; 1896, pp. 489-495; 1897, pp. 169-176, pl. iv., pp. 600-610; 1898, pp. 328-333.


KIANSI PROVINCE
CHEKIANG PROVINCE
KUATUN
PUCHENG
SHAOWUFU
KIEN-NING
YEN PING
Min River
CHING FENG
SUEY KAO
FOOCHOW
FUNING
HINGHUA
TING CHOW
FOHKIEN PROVINCE
CHIANG CHU
CHANG CHOW
AMOY
KWANG TUNG PROVINCE
Han River
SWATOW
FORMOSA CHANNEL
ROUCH MAP
OF THE
FOHKIEN PROVINCE.
LINES ALREADY TRAVERSED
PROPOSED EXPEDITIONS
BOUNDARY OF THE PROVINCE

north branch of the River Min to Wu Yi Shan, walk from there across country to Kuatun, and, after some weeks' stay in the mountains, go down to Shaowufu and return by the western branch of the Min. This was the route followed by our collectors on the previous three trips. The river journey from Foochow to Wu Yi Shan is about 250 miles, from Wu Yi Shan to Kuatun over the mountains about 40 miles, from Kuatun to Shaowufu about 45 miles, and from Shaowufu to Foochow 260 miles.

We left Foochow on the 12th March, 1898, in a large rapid-boat, hired and fitted out for us by Mr. Rickett, who, together with Mr. F. W. Styan, had lent or otherwise provided us with everything we were likely to want during our trip. The journey up river was uneventful; the city of Yen Ping was reached in four days, and Kien-ning, the next large city on the way, was passed on the 18th March. The scenery from Shuikow (70 miles above Foochow) to Kienning was, as a rule, fine, the river flowing through a mountainous and well-wooded country. Rapids were frequent and often difficult and dangerous, but as our boat was not deeply laden they were passed without accident. From Kien-ning to Wu Yi Shan the country appeared much less wooded than further south. The higher hills were often at some distance from the river, while those near the stream were mostly low and bare; but fine woods were common along the flat river-banks, and fringes of leaf-shedding trees extended along the shores for miles at a stretch.

Wu Yi Shan was reached on the 24th March. While waiting for the carriers to come down from Kuatun, we spent three days in visiting the strange and interesting Wu Yi hills. Part of two afternoons was devoted to the temples, and in a magnificent wood, swarming with birds, on the lower slope of Wu Yi Shan, we specially noticed Nuthatches, three species of Woodpeckers, Bulbuls, Cettias, "Huamei," and Pigeons.

We spent a day on the river in visiting the Wu Yi gorges, and, as no boats were to be had, we hired one of the bamboo rafts in use on this part of the river. This we transformed into a fairly comfortable craft for my wife, by making fast a bath-tub on its shaky and half-submerged surface, while a couple of low stools furnished one of the collectors and myself with seats, and on this somewhat rickety concern we poled up the gorges. Fortune, in his 'Tea Countries of China and India,' has described Wu Yi Shan, its geology and botany, but he does not seem to have navigated the beautiful stream that winds through this truly wonderful mass of quaint-shaped hills. The scenery as viewed from our raft was simply enchanting. The water was of a bright emerald-green, and deep pools were not uncommon, while the frequency of shallow rapids added to the interest of the excursion. Tall perpendicular rocks, with joss-houses perched high overhead in seemingly inaccessible places, towered over us, and at every turn of the stream we had charming views of the pinnacles, mushroom-heads, and other curious shapes into which these hills are cut up. We saw several interesting birds. Kestrels were circling round the top of a cliff, on the face of which a square-cut hole was pointed out as the last resting-place of the head of some rebel abbot. Game appeared to be common, and we flushed several Ring-necked Pheasants on the river-bank. The pretty and familiar Water-Robin (*Rhyacornis fuliginosa*) was also common, and we saw Dippers, an Osprey, and *Ceryle guttata*. We proceeded for some miles up the gorges; then, as the sun began to sink, we turned back and swept rapidly down, past the ruins of the Devil's bridges, round the foot of Wu Yi Kung's precipice, then past the slender "Three Sisters," and lastly along the base of temple-studded Wu Yi Shan, and our simple-minded Charon brought us back to our boat delighted with the day's outing, and regretting that we had so short a time to spend in this fairyland of South China.

We left Ling Kung Kow towards 8 A.M. on the 28th March, and for the first few miles the road led over the Wu Yi hills. The town of Hsing Ts'un, a busy tea-market, was traversed without accident, and for some hours we travelled over level ground, and afterwards over low and more or less bare hills. In the afternoon we entered the Bohea Mountains, and for the rest of the day walked up steep, narrow valleys in a north-westerly direction. Late in the day the scenery became very beautiful, the mountains being high and well wooded in many places. At 6.30 P.M. we reached some houses by the roadside, where we put up for the night. The aneroid here marked only 1800 feet—we had done 55 li (about 20 miles) according to the natives. The filth of our lodging was somewhat disheartening, and early next morning we left this abominable place with pleasure. This day's march was very trying, the road being rough, and we had to climb up three very steep and rather high passes. The scenery was again very fine. Forest covered the mountains, human dwellings were few and far between, and we were at last in really wild country. Towards 5.30 P.M. we entered the valley below Kuatun, and an hour's climb brought us up to the village. The Mission-house, a wooden building, fairly comfortable, but rather airy, had been lent to us by Mgr. Masot, Vicar Apostolic of North Fohkien; and in the upper story of this historic residence, in which Père David had spent two trying months 25 years ago, we settled down, and, having engaged hunters, we started work.

Kuatun, as described by Père David ('Journal de mon 3^me^ Voyage,' vol. ii. p. 258), is a small hamlet built on the steep slope of one of the highest mountains of these parts, named by us Mount David after the Abbé. The village is about 3500 feet above sea-level, the mountain rising some 3000 feet above it. Five large straggling houses compose the hamlet. The inhabitants number 37 adults and 16 children, nearly all of them descendants of Catholic emigrants from Kiangsi, driven no doubt to these wild mountains by the persecutions of the last century. A smaller hamlet, consisting of three scattered houses, is situated further up the road in a high valley (alt. about 4500 feet). It is called Shang Kuatun (Upper Kuatun). The inhabitants of these two hamlets are all sturdy, independent-minded mountaineers. They are industrious, intelligent, and honest, but grasping to an incredible extent. Our hunters, however, notwithstanding their innate rapacity, proved always accurate in the information they gave me on the natural history of the country, never once attempting to deceive me with false statements. One or two of them were first-class field-naturalists.

Since Père David's visit, the conditions of the country about Kuatun have been altered; the hamlet is no longer surrounded by thick forest, and for some years the slopes above and near the village have been planted with tea and bamboo. Thus the rarer forest-loving birds, that formerly were often seen close to the village, have retired to the undisturbed woods, and the hunters are now obliged to walk over miles of difficult country to find what, 25 years ago, could be obtained a stone's throw from Kuatun. The common necessaries of life are still just as difficult to procure as ever. The mountains produce only tea, bamboo, a little Indian corn, and the few coarse vegetables grown about the village are barely sufficient for the needs of the inhabitants. A few pigs, chickens, and dogs are the only domestic animals—cattle, goats, cats, ducks, geese, and pigeons being unknown. Rice and all other provisions have to be brought from places a day's journey or more lower down.

We remained 51 days at Kuatun, and the weather during most of our stay was miserably wet. Only about 14 days altogether were free from rain, nearly all the fine weather occurring about the middle of April. The temperature during the twenty days' rain in that month was generally very low, the thermometer indoors seldom showing more than 50° Fahr. In May there was a marked rise of the temperature, but we had almost daily rains and thick mists. It appears that this was an unusually wet season; but, so far as we could make out, it rains at Kuatun during at least six or seven months of the year. The autumn months are fine, but in the winter there is plenty of snow and ice.

Broadly speaking, the country may be roughly divided into four classes of land:—1st, the cleared ground; 2nd, the forest; 3rd, the grasslands; and lastly, the stunted damp forest on the top of Mount David. The cleared country covers a comparatively small area, consisting of tea- and bamboo-plantations. These occur in the valleys and on some of the more accessible mountain-slopes, the highest Kuatun tea-plantation being about 5000 feet above the sea-level. The bamboo-plantations and the tea-fields of Upper Kuatun are the favourite breeding-haunts of *Suthora webbiana, Cettia sinensis, Oreicola ferrea,* &c. Virgin forests clothe all the steeper mountain-sides where not cleared, from the bottom of the glens often to the mountain-tops, where they meet the grass-country. Some of these forests grow on such rapid inclines that they are quite unfrequented, except by the more adventurous hunters and trappers. The difficulty of planting at such an angle, and the impossibility of utilizing the timber, have saved them until now from the axe of the woodman and the charcoal-burner. Goat-antelopes, bears, and panthers frequent the mountain-crests and the more inaccessible ravines, whence the bears and panthers make an occasional raid on the cleared ground. Wild cats (*Felis dominicanorum*) and monkeys often venture to the plantations in winter, and the former are frequently caught in the terrible gin-traps of the natives. Wild swine appear to have retired now far beyond Kuatun, and are said to be much hunted by the dogs (*Cuon* sp.) of the Shaowufu district. Tigers are known at Kuatun, though seldom seen or heard of.

The tracts of grassland which, as in South Ceylon (see Ibis, 1898, p. 334), cover the tops of some of the higher ranges and the more elevated parts of some ridges about Kuatun are of great interest. They occur from about 4000 feet above sea-level. I was unable to find out whether these lands had always been treeless or whether their present condition is due to human agency. I ascertained that the grasslands above Kuatun were occasionally fired, to renew the grass or to further the growth of some kind of fern which is used for food by the natives, but I do not know that the grassland covering part of the topmost crest of the other big mountain near Kuatun was artificially formed. However this may be, these grassy heights are now tenanted by grass-frequenting birds, such as *Tribura russula, Suya crinigera,* and *Emberiza fucata,* and it is much to be regretted that the thick mists which wrapped the higher parts of the country during our stay prevented us from searching these grasslands to our satisfaction.

The saddle between the two highest points of Mount David and some of the steep ravines leading down from the top of this mountain are clad with damp woods, which are composed of stunted deciduous trees, generally covered with moss and lichen, while there is a thick undergrowth of dwarf bamboo. In this high forest, 6000 to 6500 feet above sea-level, we procured some of our most interesting birds and three of our novelties. *Brachypteryx sinensis, B. carolinæ,* and *Proparus guttaticollis* have, until now, only been obtained there. Other high-altitude birds, such as *Suthora verreauxi, Trochalopteron milni, Silviparus modestus,* and *Niltava sundara,* are also to be found up there from spring to autumn, while a fair number of other species, not peculiar to these heights, nest there in numbers, *Liothrix lutea* in particular abounding during the nesting-season. The bad weather which prevented exploration of the grasslands was also the cause of our failure to properly work the high forest in May, for the difficulty of the climb and the descent, as well as the cold and damp encountered on the collecting-ground, proved too much for even our hardy and sure-footed native hunters.

Fathers Masip and Valencia of Shaowufu, and Father Verges the missionary in charge of Kuatun, very kindly came up from the lowlands to visit us while we were staying at Kuatun. They gave us interesting information on the locality, and told us that the Kuatun Mountains are the highest in that part of Fohkien. To Father Masip I am indebted for an excellent map of N.W. Fohkien. We left Kuatun on the 20th May, and after two days' journey over the mountains in a south-westerly direction, reached Shaowufu, a city on the banks of the western branch of the river Min, where we were most hospitably received by Fathers Masip and Valencia, and, after a day's rest at the Mission, we left for Foochow on the 22nd May.

The journey down river took but five days, including half a day wasted at Yangkow in changing boats. As on the up-river journey, we remarked that the high, well-wooded mountains are in the Yen Ping-fu district, the country from Shaowufu to Yangkow being generally uninteresting. The only disagreeable incident of the whole trip occurred some miles below Yen Ping. While waiting in a sheltered corner for a threatening storm to pass, we had an unlucky dispute with some passing boatmen, who finally attacked us and would have boarded us if my wife had not, while we were trying to get rid of our assailants, brought a gun out of the cabin, which she pointed at them from above our backs. This intimidated the ruffians, who let go our fore-sweep, which they were trying to break, and we were able to pull in the anchor and shove off in mid-stream. At 5 A.M. on the 27th May we were back at Foochow.

Our best thanks are due to my chief, Sir Robert Hart, Bart., G.C.M.G., who kindly granted me leave to undertake this trip to N.W. Fohkien; to our kind hosts at Foochow, Count and Countess de Galembert and Mr. Rickett; to Mr. Styan, Mgr. Masot, and Fathers Masip, Valencia, and Verges. For the determination of many of our birds I am indebted to Mr. Ogilvie Grant, Dr. Oustalet, and Père David. And, lastly, whatever success we may have had on this expedition is largely due to the untiring energy and zeal of our two collectors, Wang Wang and Chunkai, and to the patient industry and devotion of our native servant.

1. MERULA OBSCURA (Gm.).

This Thrush passes Kuatun in April, May, and November.

2. MERULA PALLIDA (Gm.).

Two specimens of this Thrush were sent to us from Kuatun in March 1897. They had been obtained late in the previous autumn or during the winter.

3. MERULA FUSCATA (Pall.).

We have examples of this Thrush shot in winter at Kuatun and near Shaowufu.

4. Geocichla sibirica (Pall.).

We have skins of this Thrush obtained in May, September, and October at Kuatun, where it would seem to be not uncommon on migration, especially during the autumn. Only two examples were procured during the last expedition—a fine male, shot on the 11th May on Mount David, some 6000 feet above sea-level, and a female brought to me on the 16th of May from a valley a few miles from Kuatun.

5. Geocichla varia (Pall.).

Two examples shot on the 4th and 23rd of April during the last expedition do not differ from specimens from Formosa and Foochow, nor from those collected on previous trips to Kuatun, where this bird appears to winter. I am indebted to Mr. G. F. Müller, of the Imperial Maritime Customs of China, for an example shot near Pakhoi in South China.

6. Myiophoneus cæruleus (Scop.).

A very common bird on the torrents near Kuatun.

Our collectors told us that in 1897 they found there quite a number of nests, but they appear to have begun to look for them too late, nearly all the nests containing young. They, however, brought us back two nests with one egg (others broken in taking the nest) and four eggs. The former was taken on the 19th of May. It is a somewhat oblong cup, composed of moss, with a first lining of dead leaves, then tendrils, and lastly bamboo-leaves, a few fine roots and tendrils holding the egg-cavity and the rim of the nest together. There is no moss at the back of the nest, where it rested against the rock it was taken from. The inner diameter of the nest is $3\frac{1}{2} \times 5\frac{1}{2}$ inches, part of the egg-cavity receding under the back rim. The depth of the egg-cavity is 2 inches, the outer diameter 7 × 9 inches, and the outer depth about 4 inches. The egg belonging to this nest is ovate in shape, with a very square apex. It measures 1·45 × 1 inch. Its colour is a light and dull stone-green, with a few specks and partly smudged spots of Indian red, and it has a tinge of red on the large end, where the spots are more numerous.

This year we were unfortunate (owing, I suspect, to the generally difficult position of these nests) and I only brought back one nest, taken on the 4th May from a ledge or recess in the rocky bank of the torrent that rushes down the narrow and steep glen below Kuatun. This nest was admirably concealed by a tuft of long grass that hung from above the edge in front of the nest, the bank being overgrown with bushes and trees. The nest was only about 3 feet above the stream. It is made of moss, earth, and fine roots, with an inner cup of fine roots and dead leaves, the moss and earth forming a large mass halfway round the cup, and probably piled up to fill up the niche and put the structure on a level keel. The depth of the cup is 2½ inches, and the inner diameter is 4½ inches. There were four eggs, nearly fresh. They are ovate in shape, one of them being a rather short ovate. The colour is a reddish stone, very faintly freckled all over with an extremely pale shade of red, and one of the eggs has a very few small specks of dark red. They measure 1·41 by 1 inch, 1·40 by 1 inch, 1·35 by 1·03 inch, and 1·35 by 1 inch.

This bird appears to leave its nests on the slightest provocation. Two new nests thus deserted were seen by us near Foochow; while this spring (near Kuatun) the collectors saw one being built on a tree (!), but this also, on their returning to it afterwards, proved to have been abandoned.

7. Monticola erythrogaster (Vig.).

This fine Rock-Thrush occurs sparingly on the Kuatun Mountains, from about 3000 feet above sea-level, whence we have five adult males, three females, and two young. I have seen one flying over the top of Mount David. Two nests were found by our collector in 1897. They were taken from ledges on the face of rocks close to the village at an altitude of about 3500 feet.

One of the nests, taken on 20th May, contained two young birds and two addled eggs. Our wily Celestials considered the young too small to make into specimens, so they tied them by the leg until the time came to take them, the parent birds continuing meanwhile to feed them. The remains of this nest consist of a pad of very fine roots woven and matted together; a leg of a grasshopper and a feather of a young bird still adhered to the pad when we received it. The two eggs, ovate in shape, measure 1·01 by 0·74 inch and 1 by 0·76 inch. They are of a pale pinkish yellow freckled with a darker shade of the same colour. The other nest, found on the 21st May, contained three young and an addled egg.

8. Monticola gularis (Swinhoe).

An adult male was shot by our men at Kuatun on the 9th May, 1897. We have not yet obtained this bird at Foochow. This Rock-Thrush is common at Newchwang in spring.

9. Garrulax picticollis Swinhoe.

Although we obtained breeding examples at Kuatun during the last expedition, we failed to find the nest. A large flock was met on the 20th March in a wood close to the river in the Kienyang district, so that this bird may be said to be an inland species occurring in mountainous wooded country at all altitudes, probably all over South-west Chekiang, Western Fohkien, and N.E. Kwangtung.

10. Trochalopteron canorum (L.).

I procured two nests of this bird, each containing four eggs, on 19th May: one clutch was hard set, the other fresh. The hunter was unable to secure the parent birds, but I have no reason to believe that he was mistaken. The nests are large cups, of rough exterior, made of twigs, &c., the egg-cavity in one measuring 3½ inches in diameter by 2½ inches in depth, and in the other 3 inches in depth by 3½ inches in diameter.

The four eggs of the fresh clutch are of a rather broad ovate in shape. Three measure 1·04 inch by 0·82, and one 1·05 inch by 0·83. The colour is uniform greenish turquoise-blue. The texture is not very smooth and is slightly pitted, but it is smoother than that of a clutch of four eggs brought to me in May 1897 at Peling, near Foochow, and declared by the finder to be the eggs of this species. The shape of two of these latter eggs is a short ovate, one is rather oval with pointed extremities, and one is quite oval, also with pointed ends. The colour is absolutely the same as that of the Kuatun eggs, but the shell-surface is much rougher. They measure 1·07 inch by 0·88, 1·07 inch by 0·86, 1·05 inch by 0·84, and 1·02 inch by 0·84. The remains of the nest consisted of oak-leaves, bamboo-leaves, and bracken, with a lining of pine-needles.

One of the Kuatun nests was placed on a tree-stump in a wood, and the other in a tea-bush.

11. TROCHALOPTERON CINEREICEPS Styan.

Trochalopteron styani Oustalet, Bull. Mus. H. N. 1898, no. 6, p 253 (part).

This is a common bird on the Kuatun Mountains. Our hunters shot several during the last expedition. Three of these, in my collection, all differ from one another in the colour of the cap. One male, dated 3rd May, has the cap nearly black with iron-grey occiput, the grey being prolonged down the nape; another male, dated 17th May, has the cap not quite so black, but the grey is prolonged down to between the shoulders; and a female, dated 11th April, has a grey cap without a trace of black.

This species nests in woods, I believe, building on the dwarf bamboos that form the chief undergrowth in most of the forests near Kuatun. In 1896 our collectors brought back a nest and two eggs taken in May. They shot at the bird as it flew off the nest, but did not secure it, a tail-feather remaining to prove the ownership of the nest. One of the eggs measures 0·96 inch by 0·72. The shape is ovate, the colour greenish turquoise-blue, and the texture is very smooth and polished.

A nest and three eggs collected by the Kuatun hunters in 1897, and said to be of this bird, were sold to me last spring. The eggs measure 1·10 inch by 0·77, 1·10 inch by 0·76, and 1·05 inch by 0·75. The shape of these is slightly more elongated than that of the above-mentioned egg. A nest and two eggs were found just before we left Kuatun, but the eggs had been sucked by rats. The diameters of these are 0·71 and 0·70 inch.

12. Trochalopteron milni David.

This beautiful bird has been found by us only on the summit of Mount David. It lives among the low bamboo undergrowth of the forest, and appears to be now a scarce bird. Years ago, the natives say, many used to be captured in the rat-traps, but now they seldom, if ever, meet it below 6000 feet. However, in winter it must come down to a much lower level, but probably keeps to the forest undergrowths. I was told that, unlike its relatives, this Babbler is of a tame and confiding nature, and that its note is of surpassing beauty. We were unable to find the nest, and I regret to say that I did not see the bird alive. Our collectors shot a pair in the spring of 1897, and this year seven were shot by the native hunters. Of these, one is in the British Museum, while Styan, Rickett, and I have each two.

The notes taken on these seven birds are as follows:—

(*a*) ♀. 11th April, 1898. . Iris ? crimson; bill black; legs dark purplish grey: length 10·5 inches: ovaries developing.
(*b*) ♀. ,, ,, Soft parts and ovaries as above: length 10·5 in.
(*c*) ♂. ,, ,, Soft parts as above: testes 0·25 inch long: length 11 inches.
The stomachs of all these contained small beetles; that of the male contained also the remains of a small centipede.
(*d*) sex ? 12th April, 1898. . Soft parts as above: length 10·8 inches.
(*e*) ♀. ,, ,, ,, ,, wing 4 ,,
(*f*) sex ? ,, ,, ,, ,, length 10·8 ,,
(*g*) ♂. ,, ,, ,, ,, ,, 10·6 ,,

13. Ianthocincla berthemyi David.

This fine Babbler is not uncommon in the forests. We found it on the summit of Mount David, and it descends to at least 3000 feet above sea-level. Although I was not fortunate enough to see this bird alive, I once heard its whistle, which is the most beautiful bird-note I have ever listened to. I could not get any live young, but on the eve of our departure two were shot. The nest is not unknown to the natives, as I heard them once talking about it. An egg and the remains of a nest *supposed* to belong to this species were brought to us by our men in the spring of 1896. The egg is greenish turquoise-blue, like those of *Trocholopteron cinereiceps,* but it is even smoother and more polished. The shape is an elongated ovate, and it measures 1·16 by 0·80 inch. The remains of the nest consist of a pad of bamboo-leaves, inside of which there is a thin layer of fine roots, small twigs, and pine-needles, securely woven together in the shape of a shallow cup, about 5 inches in diameter and about ½ inch deep.

The colours of the soft parts in this rare and charming species are:—*Iris* grey, with an outer ring of blue; *bare skin round the eye* blue; *bill* black at the base, apical half yellow; *legs* greenish lead. Length 11·5 inches. The young bird differs from the adult only in having the top of the head plain and in the breast being chiefly grey. There is no white on the ear-coverts, and the terminal white spots on the side rectrices are not so clearly defined as in the adult. The general plumage is, of course, duller.

14. POMATORHINUS SWINHOII David.

This handsome Scimitar-Babbler is not at all uncommon in Central and North-west Fohkien in suitable localities. Among the Kuatun Mountains we did not hear it very often, but it was breeding in the forest on the top of Mount David. Our collectors found there, during a previous visit, a couple of deserted or old nests. One had been pillaged by rats and contained broken egg-shells.

15. POMATORHINUS STRIDULUS Swinhoe.

Common all over Fohkien in suitable localities. We found some breeding on the top of Mount David.

Our collectors brought us down a nest and four eggs, taken at Kuatun on the 27th April, 1897. The nest is an oblong domed structure, made wholly of bamboo-leaves with fine grass-stems and a little moss as lining. The inner diameter is about 3 inches, outer diameter about 5 inches by 6 inches in depth (front to back wall). The depth of the egg-cavity is about $2\frac{3}{4}$ inches. The total outer length is about 10 inches. The four eggs are ovate in shape and measure 0·90 by 0·68 inch.

16. Proparus guttaticollis La Touche.

The only place where this pretty little bird has as yet been obtained is the forest on the summit of Mount David. It lives there in small flocks, probably coming down to a lower level during the winter snows. I met with it once on the very top of the mountain on the 15th April. There was only a pair, busy exploring the branches of the still bare trees, and their ways resembled those of the Tits, while they constantly uttered a plaintive "tzi tzee," not unlike the call of *Acredula concinna*. The food of this bird consists of small insects, caterpillars, and one of those shot had a tiny snail and butterfly's (?) eggs in its stomach. The soft parts are as follows:—Iris greyish hazel; bill black; gape yellow; legs reddish grey.

♂. Bill 0·45 in.; wing 2·26 in.; tail 2·08 in.; tarsus 0·91 in.; length 4·90 in.
♀. ,, 0·45 ,, ,, 2·17 ,, ,, 2·04 ,, ,, 0·91 ,, ,, 4·84 ,,

Eleven specimens were measured.

A nest and three eggs were found by our collectors in the high forest on the 25th May, 1897. The ground-colour of one of the eggs is a light sea-green, with a cap of blotches of several shades of brownish green over a few underlying grey spots, with short hair-lines of a very dark brown distributed over the whole; the rest of the egg has a very few minute specks. The shape is a slightly rounded ovate. It measures 0·70 by 0·55 inch. The other eggs are similar.

On the 18th May last, two days before our departure, two of the hunters who had, notwithstanding the bad weather, ventured up the mountain, brought me another nest with four fresh eggs and the remains of the parent bird. This nest they also found in the forest on the top of our mountain. Like the preceding, it is a neat and strong little cup made of coarse grasses and bamboo-leaves, and bound with moss. A bunch of long grass hangs from its base. The edge of the nest is neatly finished, and there is a thick lining of soft, shining, black fibre. It was placed in the upright fork of a dwarf bamboo, and was not *slung*, like the nests of *Liothrix* and *Alcippe*. The inner diameter of this nest is $1\frac{3}{4}$ inch by 2 inches; the depth of the cup is about $1\frac{9}{10}$ inch. The outer diameter is about $3\frac{1}{2}$ inches, and the outer depth about $3\frac{1}{2}$ inches. The four eggs differ as follows from the one described above:—Besides the blotches, chiefly gathered about the large end, there are also several blotches over the rest of the egg; the underlying spots are more apparent and numerous, and are of a violet-grey colour. They are ovate in shape and measure 0·76 inch by 0·56, 0·75 inch by 0·54, 0·74 inch by 0·53, and 0·72 inch by 0 55.

17. ALCIPPE HUETI David.

We noticed several flocks of this bird during the up-river journey, and it was common enough, during our stay, on the top of Mount David. Three nests were obtained. One was found in a wooded valley of the Yungfu Mountains, near Foochow, on the 15th June, 1896. It was placed on a low bush and was slung on the twigs at the extremity of a branch, about 2 feet from the ground. It contained three fresh eggs. This nest is composed of bamboo and other leaves, the skeleton ribs of fern frond tips, a little grass, and a few pine-needles; these and the fern-ribs, with a few spiders' webs, holding the nest together. There is a compact lining of pine-needles and a few black fern-stems. The whole nest is very loosely put together. It measures $2\frac{1}{2}$ inches in inner diameter, about 4 inches in outer diameter, $1\frac{3}{4}$ inch in depth of cup, and $2\frac{1}{2}$ inches in outer depth. Two of the eggs measure 0·76 by 0·60 inch, and one 0·73 inch by 0·58. They are ovate in shape, and their colour is a pale livid pink, with small clouds and blotches of pale livid claret. On one of the eggs there is a small cap of this tint, over a few violet-grey underlying spots, while on the other two the markings are chiefly about the larger end, round which the violet-grey underlying spots are disposed. Numerous short hair-lines of madder-brown are scrawled over the blotches, and small spots of the same colour occur here and there over the eggs.

The second nest, containing four eggs, was taken by our men at Kuatun on the 6th May, 1897. It was found in bamboo-jungle at an altitude of about 4000 feet. The third nest, obtained during the last expedition, was found high up on the mountain above Kuatun, and was brought to me with the hen parent on the 5th May. It was slung on the twigs of a dwarf bamboo. It is a fairly strong cup, made of bamboo-leaves and coarse grass-blades, and bound with moss. The cup is rounded inside with fine twigs or leaf-stems, and has a light lining of soft, curly, black fibre. The inner diameter is 2¼ inches by a little under 2½, the outer diameter 3¾ inches by 5½; the depth of the cup is a little under 2 inches, and the outer depth is 3¼ inches. This nest contained four fresh eggs, resembling generally those found near Foochow, but they are more thickly blotched and have very few hair-lines or dark spots. Three have a cap, the centre of the large end being lighter, and one has a rough ring. They are ovate in shape and measure 0·76 inch by 0·57, 0·75 inch by 0·57, 0·72 inch by 0·57, and 0·72 inch by 0·56.

18. ALCIPPE BRUNNEA Gould.

Common in the forests about Kuatun. Fohkien examples have lighter underparts than Formosan specimens, but this appears to be the only difference between them.

19. STACHYRIDOPSIS RUFICEPS (Blyth).

Eleven specimens from Fohkien differ from seven Formosan specimens, in having the red of the head of a noticeably lighter tint and the whole of the underparts of a much warmer colouring.

We found four nests of this bird in May this year, and one was taken for me last year. All were found in bamboo-jungle, and at least three were built close to paths. Four of the five clutches were incubated, and one was fresh. They consist of 5, 5, 5 (fresh), 4, and 3 eggs. The nests are all more or less fragile, of rough and uneven outward shape, domed, with side entrance. They are made of bamboo-leaves gummed together, apparently with spiders' webs, and are lined with fine grass.

The two nests that I took myself were placed on bent dwarf bamboos, to which they were fastened, and were also made fast to two or three upright bamboos. They were from 2 to 3 feet from the ground. The dimensions of one, taken in the high forest on Mount David, are:—total length 6½ inches; width 4½ inches; depth from entrance to outer back wall 3½ inches; depth of egg-cavity about 1¾ inch; inner diameter 2 inches; aperture (oblong) 1½ inch high by about 2 inches wide. The other nest, taken from the jungle by the roadside above Kuatun, measures:—total length about 5¼ inches; depth from entrance to back wall 3½ inches; it is widest at the top, with a cone-shaped base; depth of egg-cavity about 1½ inch; inner height about 3 inches; inner diameter 2 inches; aperture 1 inch by 2 inches.

None of the three clutches which I have now by me resemble one another. In one, four of the eggs are perfectly ovate in shape, the fifth being nearly oval. These eggs are white, thinly but distinctly speckled with pale brown on a few underlying violet specks, the markings chiefly concentrated round the large end of the egg, where they form a more or less distinct ring. These eggs measure 0·68 × 0·50, 0·67 × 0·51, 0·67 × 0·50 (two), and 0·66 × 0·51 inch. Another clutch of five eggs has only a very few pale brown marks, two of the eggs being almost white. Two others have a more or less well-marked cap, while the fifth has but a few faint marks round the large end, these forming a faint cap or crown. Four of these eggs incline to a blunt oval, the fifth is an exact ovate. They measure 0·65 × 0·50, 0·65 × 0·49, 0·63 × 0·50 (two), and 0·63 × 0·49 inch. The three eggs of the third clutch have a well-defined small cap or very broad ring of vandyke-brown, and violet specks over fainter grey underlying specks, with a very few marks over the rest of the eggs. They are ovate, with a very blunt and rounded apex. They measure 0·66 × 0·50, 0·62 × 0 50, and 0·61 × 0·49 inch.

20. Suya crinigera Hodgson.

This bird is common on the grasslands above Kuatun.

We did not obtain nests there, but on Peling, near Foochow, I found three during May 1897; all placed in tufts of grass, on hills covered with grass and low brush-wood. Of these nests one was empty, though new; another contained young, and the third was unfinished; they are of the same shape as those of *Prinia sonitans.* They are made of long grass-blades, coarse and fine, and grass-down, cobwebs being used in the construction. The total length of one nest is 5½ inches, width 3¾ inches, depth from front to back 2¾ inches.

21. Cisticola exilis (Vig. & Horsf.).

A young male of this species was shot in N.W. Fohkien on the 22nd March, during the boat journey to Kuatun. It was found on some stony ground overgrown with sword-grass, near the river. This bird is very dark, differing in this from two examples of *C. exilis* shot in North Formosa. Total length 5 inches, wing 1·85, tail 2·30. Iris hazel; bill—upper mandible pinkish brown, lower mandible pink; legs pale flesh. Mr. Rickett obtained an example of this species some years ago near Foochow. As yet we have no others from Fohkien.

22. Paradoxornis guttaticollis David.

We have not obtained this bird at Kuatun, but it is common in the mountains of Central Fohkien.

23. Paradoxornis gularis Gray.

We have two nests with eggs of this bird. The first was taken by our men at Kuatun on the 12th May, 1897. One of the eggs of this nest is pale greenish with a few clouds, chiefly at the large end, of very pale raw sienna, a few comma-like hair-lines and spots of brown, and a few well-defined lilac-grey spots. The texture is smooth and the surface slightly glossy. Its shape is a broad ovate with a much rounded and blunt apex. It measures 0·84 × 0·65 inch.

The second nest was found by one of our Kuatun hunters in the forest (alt. about 3500 feet) on the 1st April, 1898. It was placed on a bamboo at a height of about 14 feet from the ground, the bamboo being but a few yards from the path. It was then empty. On the 14th we returned and found the hen sitting. She only flew off, when the bamboo was touched, to perch on a neighbouring tree, where I shot her to make quite sure of the identity of the nest. There were three eggs quite fresh. The nest is one of the most beautiful that I have ever seen. It is a carefully-finished cup, with broad bulging sides (especially on one side), made of strips of bamboo fastened together with cobwebs and spiders' nests. It is lined with fine strips of grass. The outer diameter is 4 inches, the outer depth 3½ inches; the inner diameter is 2½ inches, and the depth of the cup 2¼ inches. The eggs resemble those of the first clutch, but the clouds are more numerous, more broken up, and more distributed over the whole egg. These eggs have a cap of lilac-grey underlying spots on the large end. The shape of one is a nearly exact oval, and the other two are a broad ovate with blunt and much rounded apex. They measure 0·85 × 0·67, 0·84 × 0·67, and 0·82 × 0·64 inch.

24. SUTHORA WEBBIANA Gray.

The comparison of a series of N.W. Fohkien specimens of this bird with some skins from Peking, Shanghai, and Ichang, which I owe to the generosity of Mr. F. W. Styan, and with a single, but especially good and perfect, skin (apparently typical) of *Suthora bulomachus* from North Formosa, induces me to make the following remarks on this variable species.

I will first state that my Formosan skin, a male shot on the 25th November near Hobé, in North Formosa, differs from *all* my 28 Chinese skins:—

(*a*) By the paler rosy colour of the sides of the head, in absolute contrast with the red of the top of the head;

(*b*) By its very pale throat; and

(*c*) By the larger size of its bill.

Our Kuatun breeding birds do not differ conspicuously among themselves; all have the intensely ruddy head and neck well separated from the grey-brown back; but the winter specimens from the same locality have the red of the head somewhat less distinctly separated from the colour of the back, and are duskier throughout, thus approaching the brighter of the dull-coloured Shanghai birds. All these birds are absolutely distinct from the Formosan skin mentioned above. The examples from Shanghai and its neighbourhood (one summer and six winter skins) differ from the Kuatun specimens in the less rich colouring of the head and the generally duller appearance of the plumage, the colour of the head merging into the colour of the back; but another winter skin from Anwhei is lighter and more brightly coloured, and, by its head and back, is intermediate between the Kuatun and the Formosan examples. An October skin from Ichang is again very like the Kuatun skins in the distinctness of the head and neck colouring from that of the back, the brightness of its head, and the light colour of the underparts. A Peking example of *S. longicauda* is very like the duller of the Shanghai skins, but equals in size the Formosan bird.

The conclusion that I draw from the comparison of my skins is that there is but one real species, *Suthora webbiana* Gray, which is, however, divisible into one Formosan and three Chinese races:—

Suthora longicauda Campbell. North of Shanghai, but barely distinct from the following.

S. webbiana Gray (typical). Shanghai and the adjoining country along the coast.

S. suffusa Swinhoe. Upper Yangtze and Fohkien mountains. Racial characters specially marked in Fohkien summer skins.

S. bulomachus Swinhoe. Formosa. Very fairly distinct from the Chinese birds. More nearly related to the Fohkien and Ichang race of *S. webbiana*.

I believe that Mr. Styan is of my opinion as regards the Chinese races of *S. webbiana*, but his large series shows that all the Chinese forms meet in the basin of the lower Yangtze.

Webb's *Suthora* is very abundant near Kuatun, frequenting the tea-fields in large flocks, as also bamboo-plantations and thickets near cleared ground. I saw it paired for the first time on the 14th April. I obtained the first nest on the 27th April, and we took nests containing fresh eggs throughout May to the 19th May (day before our departure). The bird nests in the tea-plantations. The nest is placed on the bigger tea-plants, in a fork or between two or three upright branches near the top of the bush, but always well sheltered by the upper twigs and leaves. This species is said to be very shy at the nest, and my hunters assured me that if the parent birds notice that their dwelling has been discovered they will break the eggs and forsake it. I must say, however, that one nest which I watched, after having disturbed the sitting bird, was again occupied after a few minutes' waiting. Perhaps the hunters' statement only applies to nests with eggs that have not yet been sat on. On being disturbed, the sitting bird slips quietly off and flies away close along the ground till hidden by brushwood, &c. A nest was once brought to me in a closed box, the parent bird being inside, tied by the leg. This bird, on my taking hold of it to release it, bit fiercely, and when released flew on to the rafters of our sitting-hall, where it remained for some seconds swearing at us before it finally flew away.

The nest is a very pretty and generally neat, well-finished, and fairly stiff cup, composed of bamboo-leaves, coarse and fine grasses, wrapped up in long soft moss and bound with cobwebs. The lining is of very fine grass-stems or coir-fibre, and the rim of the nest is generally well finished and plastered with cobwebs. The inner measurements of 16 nests average 2 inches in depth by $1\frac{3}{4}$ in diameter, several being somewhat under 2 inches in depth, while one is $2\frac{1}{4}$ inches. The cup is not always round, as six of the 16 nests measured are oblong, with a diameter varying between $1\frac{1}{2} \times 1\frac{3}{4}$ and $1\frac{3}{4} \times 2$ inches. The outer depth varies much; the average is about $3\frac{1}{4}$ inches, but I have one which is as much as $4\frac{3}{4}$, while another is only $2\frac{3}{4}$ inches. The thickness of the walls is also variable, the round nests varying from 3 to 4 inches in outer diameter, and the oblong ones from 3 to $3\frac{3}{4}$ inches. The average outer diameter is $3\frac{1}{2}$ inches.

The full clutch of eggs is five; the general colour being a plain pale greenish blue, but pure white and greenish-white clutches are not uncommon. The most ordinary shape is a broad or rounded ovate, but every other shape occurs from a perfect oval to an ovate. The texture is smooth, satiny, but only slightly glossy. Seventy-four eggs average 0·62 × 0·49 inch; the smallest of these is 0·56 × 0·47 inch, while the largest is 0·67 × 0·51 inch. I have not included in the above average one clutch the eggs of which measure 0·62 × 0·45, 0·58 × 0·45, 0·57 × 0·45, and 0·56 × 0·44 inch.

The eggs attributed to *S. bulomachus* (Ibis, 1898, p. 361) are slightly darker in colour than the above, and are much broader.

25. Suthora davidiana Slater.

We obtained only a few examples of this new *Suthora* on the last trip. They were shot on some hills near Kuatun, where they were apparently located.

The soft parts of this species, as noted by me at Kuatun, are: iris brown; bill bluish white; legs dull reddish grey. Three males measure in total length 3·7, 3·8, and 3·9 inches.

The intensity of the chestnut on the head varies somewhat; most of my specimens have dark lores, and the feathers over the eye are partly black. The plate in 'The Ibis' (1897) is incorrect as regards the shape of the bill and the general appearance of the bird.

26. Suthora verreauxi Sharpe.

♂. 11th May, 1898. Iris dark brown; bill plumbeous, lighter on lower mandible; legs flesh-coloured, tinted with plumbeous; feet strongly tinted with the same. Length 4·3 inches. The stomach contained tiny white larvæ, one tiny beetle, and remains of reeds.

Our collectors shot two specimens on the 9th April and 10th May, 1897, in the forest on the top of Mount David. This spring a flock of about ten birds was met by one of our hunters in the very same part of the forest on the 11th May, but only one specimen was secured. I have compared this skin with specimens in Père David's private collection and with the type and the other specimens in the Paris Museum.

27. Cinclus pallasi Temm.

Common on the torrents near Kuatun. Full-grown young were flying about during our stay. Adult birds were extremely wild, but the young generally allowed a close approach. Several eggs were collected for me before our arrival. One of these is of a somewhat elongated ovate with pointed apex, and measures 1·55×0·77 inch; another is more oval, measuring 1·50×0 76 inch.

28. Henicurus sinensis Gould.

We have not obtained the nest of this bird in N.W. Fohkien, but I took one in the Peling country near Foochow on the 14th May, 1897. It was found in an alley at the back of a house, and was placed on a ledge of the cut rock forming the back wall of the alley, at a height of about 9 feet from the ground. On my approach the bird flew down the alley and waited there till the crowd had dispersed, and, notwithstanding that an egg had already been taken from the nest, returned to it as soon as the place was again quiet.

The nest is a cup, composed outwardly of moss, with thick sloping walls in front, diminishing in width at the sides, and very thin at the back, where the nest rested against the rock. The inner part of the nest is of fine grass, fine roots, and tendrils, these forming a strong inner cup, but which can be seen through where no moss occurs below it; there are a few skeleton-leaves as final lining. The depth of the cup is between 1¾ and 2 inches. The inner diameter is 3¼ inches. From the edge of the cup to the foot of the sloping front wall about 4 inches. The thickness of the back wall is about ½ inch. There were four fresh eggs: two of somewhat pyriform ovate shape, and two more ovate, but also with sharp apex. The ground-colour of these eggs is a cold or stone orange, and they are spotted and lightly speckled with two shades of a warm brick-red over reddish-lilac underlying spots. The spots are fewer on one egg, darker, and there is a small dark cap of semi-underlying blotches of warm red-brown. There is an approach to a cap on another egg. These eggs are of smooth texture, with very little gloss. They measure 0·95×0·67, 0·92×0·69, 0·90×0·66, and 0·90×0·66 inch.

29. Henicurus guttatus Gould.

This pretty Forktail is not an uncommon resident at Kuatun, whence our collectors have procured us some twenty skins, but we have not yet found the nest. I have seen this bird high above Kuatun, and in winter it probably seeks the lower valleys of the range.

Four males average: culmen 0·80, wing 4·37, tail 5·80, tarsus 1·15 inch. Two females average: culmen 0·80, wing 4·05, tail 5·30, tarsus 1·15 inch. A male shot last spring measured 10·7 inches total length. Two females shot last spring measured 10 inches total length. An apparently young bird, dated "Kuatun, 27.9.96," has the dorsal spots very small, and shows two partly white feathers on the throat and neck. Another, dated "Kuatun, 2.10.96," is in full moult.

30. Henicurus schistaceus Hodgs.

Distributed over the mountainous parts of Fohkien. We have a few skins from Kuatun, and one nest with eggs, taken there by our collectors on the 17th April, 1897. The nest is of moss outwardly, the back wall being very thin. The inner cup is strong and composed of fine red-brown fibre (probably coir), with a good lining of skeleton-leaves. The shape of the cup is oval. Inner diameter 3 × 4 inches; outer diameter 4½ × 6 inches; depth of cup 1½ inch; height of front wall 2½ inches. There were four incubated eggs, one of which is marked. The shape of these eggs is ovate. The ground-colour is pinkish white; two eggs are sparsely covered with irregular-shaped spots of pale reddish; in the third the markings are larger and in the form of splashes, with large underlying blotches or splashes of a pale reddish lilac, which form a cap on the large end of the egg. Two of these eggs measure 0·89 × 0·65 and 0·87 × 0·63 inch.

We have young from Kuatun taken from the nest and dated May 1896, and 8th May 1897. In these the top and sides of the head and the back are olive-grey, the lesser wing-coverts edged with the same. The throat is white, each feather edged with grey. The breast-feathers have a broad edging of olive-grey, and in very young birds the flanks are nearly altogether brownish grey.

31. Microcichla scouleri (Vigors).

We have three nests from Kuatun: one taken by our men in 1897, containing one egg, and two obtained last spring, each with four eggs. One of the latter was taken by a native hunter on the 17th April, from a rock in a torrent, and brought to me with both the parent birds. It is a strongly and compactly built moss-nest, lined with skeleton-leaves. The inner diameter is a little under 2½ inches; the depth of the cup 1½ inch. The outer depth in front is 3½ inches, and the outer diameter 4½ inches. The four eggs were much incubated. The shape is ovate, one egg being much broader than the others. The ground-colour is white, with a few spots of light reddish, chiefly at the larger end, and forming a light cap on two of the eggs. One of the latter has well-marked and fairly large pale lilac-reddish underlying spots on the large end. The three others have these smaller and fewer in number. These eggs measure 0 77 × 0·59, 0·77 × 0·59, 0·77 × 0·57, and 0·75 × 0·59 inch. The other nest was obtained for me in March, before our arrival at Kuatun; the eggs have darker spots than those just described.

32. Brachypteryx sinensis Rickett.

Eight males average: culmen 0·60 inch, wing 2·61, tail 2·61, tarsus 1·10. Total length of seven males, measured in the flesh, 5·40 to 5·70 (average 5·60) inches.

Eight females average: culmen 0·58 inch, wing 2·51, tail 1·94, tarsus 1·10. Total length of five females, measured in the flesh, 5·40 to 5·60 (average 5·50) inches.

Iris dark brown, bill blackish, legs greyish purple, feet darker.

Two males, dated 19.10.96, have light spots at tip of greater wing-coverts, and one of them has dull brown quills.

A young female, obtained in October 1896, has light spots at tip of greater wing-coverts; and a younger one, dated 19.10.96, has, besides these light spots, a few pale-centred feathers on hind neck and upper back (remains of nestling plumage). The young, taken from the incubated eggs mentioned below, are covered with black down.

This Shortwing is found in the forest on the top of Mount David from April to November. Our collectors have always obtained it, while I have seen it, in the dwarf bamboo-undergrowth of the forest, and as yet we have found it nowhere else. It keeps to this low jungle, and is very difficult to observe, owing to the thickness of the vegetation, which prevents one seeing anything beyond a few yards. The song of the male is very sweet, and is composed of six or seven clear but rather shrill notes. The food, as ascertained by dissection, consists of tiny beetles, ants, flies, butterfly-eggs, and one of those collected had eaten a small centipede.

Our collectors brought us two nests, each with three eggs (the full clutch) in 1897. These were taken on the 24th of April and the 25th of May, and were placed against the moss-covered trunks of trees, near the foot of the tree. During the last trip I saw two nests *in situ*; while another, with one egg, was seen by our collectors, who also took one with the full complement of eggs.

I saw the first nest on the 15th April. It was empty, but newly built; an oblong domed mass of moss, with the aperture in front near the top, and built, just as our men had told us, on the trunk of a tree, about 18 inches from the ground. It was afterwards deserted by its owners. The second nest was taken on the 11th May. It had been found on the 9th, but we were unable to take it then, as the birds were absent, and a prolonged watch under torrents of rain was dangerous in the damp and cold forest. On the 11th, the weather being somewhat better, we went up the mountain again, and having induced our collector Chunkai to set coir-fibre nooses about the entrance, the female was soon caught, and we took the nest. The three eggs were unfortunately on the point of hatching, the shell being already pierced. This nest was oblong and domed. It was placed, like the one seen on the 15th April, against the moss-covered trunk of a tree about

18 inches from the ground, the entrance, which is near the top, being also in front. The nest was worked in the living moss with which the trunk was covered, and projected but slightly when seen sideways. The aperture is nearly circular, 2 inches in diameter. The outer length of the nest is 7½ inches, the width about 5 inches, the depth from front to back wall about 4½ inches. The distance from outside the entrance to the inner wall is 2¾ inches, the diameter of the egg-cavity about 2 inches, the depth of the egg-cavity about 1 inch. This nest is made of moss exteriorly, the inner part being of dead leaves, and the egg-cavity thickly lined with, or rather made of, moss-roots.

The other nest brought back with us on this trip was taken by the collectors on the 16th May. This nest, according to Chunkai, was built about 4 feet from the ground, and was fixed sideways, the tree-trunk forming one side of the nest, which now looks as if the upper part of one side had been sliced off. Like the other, it is made outwardly of moss, the cavity has a foundation of dead leaves, and the interior is thickly lined with moss-roots. The inner height of this nest is 3½ inches; the egg-cavity is about 1 inch deep, with a diameter of 2 inches. The outer length, including some loose moss at the base of the nest, is 9 inches.

I have three full clutches of the eggs of this *Brachypteryx*. The eggs of the first clutch, dated 24th April, 1897, are ovate, as are those of the clutch taken on the 11th May, 1898. Of the three eggs taken on the 16th May two are ovate, inclining to oval, and one is of pyriform shape with blunt apex. The colour is orange or pinkish buff, the first two clutches being darker than the third. The large end is of a darker tint in all save the abnormal pyriform egg. Two eggs of the first clutch and three of the second are speckled with a slightly darker tint of orange. The texture of these eggs is smooth when seen by the naked eye, but pitted and somewhat uneven when seen through a low-power lens. There is a very slight gloss. The first clutch measures 0·84 × 0·60 inch (2 eggs) and 0·83 × 0·60 inch; the second, 0·84 × 0·61, 0·81 × 0·57, and 0·80 × 0·60 inch; the third, 0·84 × 0·61 and 0·81 × 0·60 inch (2 eggs).

33. BRACHYPTERYX CAROLINÆ.

Brachypteryx carolinæ La Touche, Bull. B. O. C. viii. p. ix (1898); Ibis, 1899, p. 123.

♂. Whole upper plumage dark russet-brown, quills brown, washed externally with the same. Ring of feathers round the eye, centre of cheek-feathers, and lores lighter. A short, silky, white eyebrow over the lores and eye. Underparts bluish white on breast, pale grey on upper flanks, white on abdomen and anal region; feathers of the throat white edged with brown, as also those of breast and upper flanks; lower flanks rufescent brown. Edge of wing silky white and pale ochre; lesser under wing-coverts white tinged with ochre; larger under wing-coverts dark brownish grey like underneath of quills. Axillaries pale grey tinged with ochre; under tail-coverts tinged with fulvous; tibiæ brown. Iris dark brown; bill livid purple-brown; mouth pinkish; inside of bill bluish; tongue slightly forked and brush-tipped, dark at the tip; legs violet-plumbeous, bluer on the joints; claws pale flesh. Culmen 0·60 inch, wing 2·45, tail 1·55, tarsus 1·10; total length 5·20 inches. 11th April.

♀. Upper plumage similar to that of the male, but with the eyebrow very short and not apparent, unless the feathers are lifted, the base of the feathers only being white. There is very little white about the throat and neck, and the breast is almost altogether pale brown, the under tail-coverts are darker, the edge of the wing has some feathers tipped with ochre, the lesser under wing-coverts and the axillaries are of much the same colour as the breast. Iris very dark brown; upper mandible and tip of lower mandible dark purplish; lower mandible greyish pink; legs violet-plumbeous with pale claws. Culmen 0·60 inch, wing 2·30, tail 1·45, tarsus 1·10; total length 5 inches. 11th May. Caught at the nest.

Besides these two examples we obtained three others:—a female, wing 2·30 inches, total length 4·80 (tail imperfect), shot on 15th April; a male, shot on the same date, wing 2·40 inches, total length 5·20; and another male shot on 9th May, total length 4·95 inches. I have named this bird after my wife, whose courage and presence of mind saved the party from rough treatment at the hands of a pack of infuriated Chinese boatmen on the return journey.

This new Shortwing is found in the same locality as the preceding species; but it seems to be much scarcer, and had hitherto escaped our collectors. The habits of this bird are apparently similar to those of *B. sinensis*; but it builds its nest on the dwarf bamboos of the high forest, not on tree-trunks. I heard the song of a bird hiding close to the first nest taken, which must have been that of the male. It resembled somewhat the song of *B. sinensis*, but ended in a deep "churr"; the song, so far as it can be put down in writing, being something like "churree-teree-teree-churr." The food, as ascertained by dissection, consists of small beetles, larvæ, tiny shells, small centipedes, and butterfly-eggs.

We obtained two nests on this trip. On the 9th of May, as we were walking along one of the paths lately cut in the forest on the top of Mount David, we heard a loud and angry chatter, like that of *Alcippe hueti* or *Strachyridopsis ruficeps*, in the bamboos near the path, and one of the hunters, looking in, found a nest with two eggs. The owner, however, had fled, and all our attempts to secure the female were fruitless; as, although she returned to the nest, she flew out at once on our approach, only giving us a momentary glimpse of a little brown bird which disappeared at once in the dark bamboo undergrowth. Heavy rain coming on, we had to give it up. On the 11th we revisited the nest; the collectors set coir-fibre nooses, and after some time the female returned and was caught. This nest is a domed oval structure, made of moss and bamboo-leaves compactly put together, rather a strong nest on the whole. The egg-cavity has a good lining of skeleton-leaves, and the dome is lined with fine black moss-roots. The aperture is large and of oval shape; a bamboo-leaf hung over it and partly closed it. It is 2 inches high by 2¼ inches broad. The total length of the nest is 7 inches, not including some loose moss hanging from the base of the nest. The outer width at the base of the aperture is about 5 inches, the depth from the same place to the back of the nest about $4\frac{1}{4}$ inches. The inner diameter is $2\frac{1}{2}$ inches, and the depth of the egg-cavity $1\frac{1}{2}$ inch. This nest was set upright on some bent bamboos that had been pushed aside when the path was cut, and was also supported by a straight-growing bamboo, on the top of which it rested. There were three light olive-green eggs.

On the 18th May, another nest, with three fresh eggs, resembling the nest just described, but with no black fibre lining to the dome, was found by our Kuatun hunters. The parent birds were not seen by the hunters, but there is no doubt as to the ownership of the nest. It measures exteriorly $6\frac{1}{2}$ inches in length, about 5 inches in width, and about $4\frac{1}{2}$ inches in depth at the base of the entrance, which is about $1\frac{1}{2}$ inch high by $2\frac{1}{2}$ inches wide. The inside measurements are: diameter $2\frac{1}{2}$ inches, depth of egg-cavity $1\frac{1}{2}$ inch, total height inside about $3\frac{1}{2}$ inches.

The remains of a nest, with three olive-green eggs and one of a greenish-blue capped with a thick freckling of reddish brown, were brought by our men from Kuatun in 1897. This nest was taken on the 25th May, in the same forest and on the same small bamboos; but our collectors could not secure the parent birds, and we had, until now, remained in ignorance as to its identity. It is quite evident that these are also the nest and eggs of *B. carolinæ*. The fourth egg is probably that of a Cuckoo.

The eggs taken on the 11th of May are light olive-green, indistinctly freckled with a shade of brownish slightly darker than the ground-colour, and forming a small cap on two of the eggs. The texture is like that of the eggs of *B. sinensis*, but there is a decided gloss. The shape of two of the eggs is an attenuated ovate, approaching a long oval, and the third egg is more oval, still narrower, and more elongated at both ends. They measure 0·87 × 0·57, 0·86 × 0·59, and 0·86 × 0·58 inch. The eggs taken on the 16th May are similar in colour. The four eggs obtained last year are nearly oval, with blunt rounded ends; three are more distinctly and heavily freckled with light reddish brown than the eggs just described, and the shell is not so polished. Two of them measure 0·84 × 0·60 and 0·82 × 0·57 inch. The fourth egg, as already stated, is bluish green, with a cap of reddish brown, two thirds of the egg being lightly freckled with the same colour. It measures 0·81 × 0·57 inch.

34. Oreicola ferrea (Hodgson).

This Bush-Chat breeds commonly on the mountains about Kuatun, at an altitude of 4000 feet and above. The nest is generally found in bamboo-plantations close to open ground, in tea-fields, and also occasionally in the open. Of the nine nests taken during the last trip, three were found on the ground in hollows under tussocks of grass in lightly planted bamboo-groves; one was taken from under a stone on the edge of a bamboo-plantation, one from a niche in a bank on the edge of a bamboo-plantation, one from a stone-bank in a tea-field close to a wood, and one from an earth-bank near a path on a grass-covered mountain, but, again, quite close to a wood. The other nests were brought to me by natives. Besides these nine, we have three taken by our men in the spring of 1897. The following are the dates of the nests collected at Kuatun:—

1897.	9 May.	5 eggs.			
	14 ,,	4 ,,			
	21 ,,	5 ,,			
1898.	29 April.	5 ,,	Slightly incubated.	No. 34,	'98 coll.
	29 ,,	5 ,,	,, ,,	,, 35,	,,
	3 May.	4 ,,	Somewhat ,,	,, 44,	,,
	5 ,,	5 ,,	Hard set.	,, 55,	,,
	9 ,,	5 ,,	Fresh.	,, 70,	,,
	13 ,,	5 ,,		,, 84,	,,
	14 ,,	5 ,,	Fresh.	,, 93,	,,
	14 ,,	5 ,,	,,	,, 94,	,,
	14 ,,	5 ,,	,,	,, 95,	,,

It has been stated that the eggs of this Chat are spotted. With us this is certainly not always the case. The three clutches taken in 1897 are of a plain turquoise-green, or of a greenish blue, rather greener and darker than the eggs of

Suthora webbiana; and of the nine clutches taken in 1898 six are also unspotted (Nos. 44, 55, 70, 84, 93, and 95). No. 34 has two eggs faintly spotted round the large end, two with a very few very faint specks, and one quite unspotted.

No. 35 has one egg faintly speckled all over, one with a ring of very faint specks round the large end, two with a few minute specks (very dark on one egg), and the fifth egg quite unspotted.

No. 94 has a distinct nimbus or cap of pale reddish-brown spots on four eggs, the fifth egg being so faintly marked that only the closest examination can reveal the spots.

The most ordinary shape of these eggs is a nearly true oval, but a few are ovate.

Thirty-three eggs average 0·73 × 0·57 inch; they vary in length between 0·70 and 0·75 inch, and in breadth between 0·55 and 0·59 inch. An exceptionally long egg measures 0·77 × 0·57 inch.

The nest is a cup with the two side-walls raised up slightly higher than the back and front. There is always a very neat inner cup, made of grass and fine roots, with a more or less thick lining of fine grass-stems, coir, or pigs' bristles. This is built within a more or less large and irregular cup of moss and coarse grasses, and which more or less fills up the cavity or hollow in which the nest is placed. The depth of the inner cup is about 2 inches, with a diameter of $2\frac{1}{4}$ inches. The outer dimensions of one nest are 3 inches in depth and $4 \times 4\frac{1}{2}$ inches in diameter.

35. Rhyacornis fuliginosa (Vig.).

This bird is abundant in N.W. Fohkien, and breeds in April and May. The nest is placed in a variety of situations. We have found it on ledges of rocks, on the banks of torrents, once on a tree-stump on the bank of a stream, under the thatch or on the top of the supporting parts of sheds by streams, and a very favourite place is on the piles of the wooden bridges that span the torrents in the mountains. I have seen as many as two nests under one bridge; but these were deserted as soon as they were finished. The inner part of the nests found about Kuatan is made of coir-fibre and fine grass-stems, with sometimes pigs' bristles added. The outer materials are moss and dried fern-fronds. Dead leaves are also used to make the base of the inner cup. The depth of the egg-cavity varies from $1\frac{1}{2}$ to 2 inches, and the inner diameter is $2\frac{1}{2}$ inches. The outer measurements are very variable, and depend on the size of the niche or cavity to be filled up.

The full clutch is generally four, but sometimes five eggs. There is much variety in the size and colouring of the spots and their disposition; but the eggs of one clutch are always of the same type. Some clutches are so thickly speckled with pale reddish brown that the pale green ground-colour is almost concealed; while others are sparsely spotted with burnt-sienna and violet, over violet underlying spots. The eggs of one of my clutches of the former type have a dark cap of confluent spots, and those of one of the lightly-spotted kind have a thick dark ring round the large end. In all the eggs that I have, however, the large end is more thickly spotted than the rest of the egg.

The shape of the eggs is purely ovate in nearly every clutch; but those of one of my clutches have a much rounded apex. Forty eggs average 0·78 × 0·58 inch; they range from 0·75 to 0·81 inch in length, and from 0·56 to 0·59 inch in breadth.

36. Erithacus sibilans (Swinhoe).

This bird, which we have not yet found at Foochow, passes N.W. Fohkien on migration. We have four examples from Kuatun, dated April and October.

37. Phylloscopus borealis (Blasius).

We have Kuatun examples dated May and September.

38. Phylloscopus tenellipes Swinhoe.

One male was shot near Kuatun during the last trip on the 20th April. Total length 5·10 inches: upper mandible and apical half of lower mandible blackish; sides of upper mandible and base of lower mandible pink; legs pale pink.

39. Phylloscopus affinis Tickell.

Oreopneuste affinis Dav. et Oust., Ois. de la Chine, no. 386.

Found on the grasslands above Kuatun (alt. 4500 to 5500 feet), where it no doubt breeds. We have specimens dated April, May, June, and October. Only one was shot on the last trip: it is a female, length 4·35 inches; "*legs* brownish green."

40. Phylloscopus coronatus (Temm.).

Five examples were shot in April at Kuatun during the last expedition. Others had been previously obtained there by our collectors, also in April.

41. Phylloscopus trochiloides (Sundev.).

We have a large series of this bird from Kuatun. Twenty-two in my collection are of the larger and darker form, wing 2·25 to 2·48 inches (two specimens measured in the flesh are 4·80 inches in total length); seven are small, wing from 1·98 (♀) to 2·20 (♂) inches (three measured in the flesh vary in total length from 4·05 to 4·40 inches). Five of the latter birds, three males and two females, differ from the larger birds in being of a brighter and lighter green above, with more yellow on the throat. The head is also of a lighter and brighter green and yellow, and the bill is smaller. One of these has a whitish spot on the outer rectrices.

This Warbler appears to be a resident species in Fohkien, as we shot one in December at Ching Feng Ling, and I have one that was obtained in Central Fohkien on the 21st November. It is very abundant in the mountains of N.W. Fohkien during the breeding-season. During our stay at Kuatun we met it constantly; it was in flocks during the first half of April, and sang loudly whenever the weather was fine. The song, as noted down by me at the time, consists of nine shrill notes, "chi-chi-chi, chi-chi-chi, chi-chi-chi."

Owing probably to our ignorance of the bird's breeding-habits, we obtained only one nest, which was found on the 9th of May in the high forest on Mount David. It was placed on the moss-covered trunk of a tree about 5 feet from the ground. The female was sitting and was rather shy, darting out as soon as the nest was approached, and flying some distance away, but soon returning to the close neighbourhood of the nest. After some time Wang Wang managed to shoot her. This bird is of the smaller and brighter form of *P. trochiloides*, which I then took to be distinct from the large and dark birds, but which Mr. Ogilvie Grant considers to be simply *P. trochiloides*. The nest is made of two kinds of moss and a little coarse grass. It is domed, with the aperture in front near the top, some of the fine long moss of which the nest is composed exteriorly hanging in front like a beard. There is one feather inside, but no lining. The total length, hanging moss excluded, is 5 inches; the width is about 3 inches, and the depth from front to back is 3 inches. The aperture is $\frac{9}{10} \times 1\frac{3}{4}$ inch; the depth from the entrance to the inner wall is $2\frac{1}{2}$ inches; the diameter of the egg-cavity 2 inches, with a depth of something under 1 inch. This nest contained three white eggs, somewhat incubated, and another, no doubt a Cuckoo's egg, which was lying crosswise in front of the other eggs. Of the three original eggs, one is very broad and almost purely oval, narrowing much at the extremities; the other two are ovate. They are pure white, the texture being fine, and they have a decided gloss. They measure 0·56 × 0·44, 0·55 × 0·45, and 0·52 × 0·45 inch. The Cuckoo's egg is of long and nearly oval shape, the large end still more blunted than the apex, which is also very much rounded. It is white, not quite so glossy as the other eggs, and is sparsely marked, chiefly about the larger end, with small specks of dark brown. It measures 0·85 × 0·55 inch. I do not know to what Cuckoo it may belong. There was one strange bird, a Cuckoo probably, frequenting these woods, which we were unable to secure, and which I did not even see, and *Cuculus intermedius* was common just below the high forest. I see that Mr. Davidson found eggs of *C. poliocephalus* in nests of *Acanthopneuste occipitalis* and *Phylloscopus humii* (Ibis, 1898, p. 18). There was another nest, resembling the one just described, in a neighbouring tree, but it was an old one.

The only other note that I have on the breeding of *P. trochiloides* is unfortunately of very little use. I was going down from the grasslands to the valley of Upper Kuatun on the 16th May, when I noticed, in a bamboo-plantation near a tea-field, a *P. trochiloides* whose behaviour showed that it had a nest in the vicinity. As I had no time to watch it I left Wang Wang there, telling him to try and find the nest. When he came home he told me that he had found the nest, but, as it contained young too small to preserve, he had left it alone. When, two days later, he returned to it, the nest had been destroyed. This nest, it appears, was on the ground, between two stones under a tea-bush.

42. Phylloscopus superciliosus (Gm.).

Kuatun examples dated April, May, and September.

43. Phylloscopus proregulus (Pall.).

Kuatun skins are dated April, May, and September. This and the preceding species no doubt winter in N.W. Fohkien.

44. Lusciniola schwarzi (Radde).

One example shot near Kuatun in autumn, 1896.

45. Acrocephalus agricola (Jerd.).

A pair was shot in a marshy hollow on the grasslands above Kuatun (alt. about 4500 feet) on the 19th May, 1897. I went over the same ground this year, but did not see any more.

46. Tribura russula (Slater).

This bird is not uncommon on the grasslands above Kuatun from about 4500 to 6000 feet. I saw three birds of this species on the 15th April last, one of which I shot. This bird, after flying out of the grass, ran along the ground and hopped on to a stone, where I shot it. The other two seen on the same day also flew out of the long grass, making more or less short flights when put up. I believe that a small brown bird seen flying down a grassy hill-slope was also of this species, and on that day I heard a long-continued and loud bird-song, which on being described to one of our native hunters was pronounced by him to be the song of this Warbler. I noted it down at the time; it was like "chee-chuckee-chuckee-chuckee-chuckee."

The food, as ascertained by dissection, consists of caterpillars, small beetles, and ants. From what I could see of the bird, its habits resembled those of the Grasshopper-Warblers and their allies, rather than the ways of our Chinese Cettias, which are bush-loving birds, seldom or never showing themselves, except on trees or in brushwood.

The ten examples shot on the last expedition differ from those described by the Rev. H. H. Slater in having an absolutely unspotted throat; they all resemble one another and bear a close resemblance to *Homochlamys brevipennis* Verreaux, but the bill and other proportions of this bird are larger, its tail-feathers have a light shaft, and the colour of the sides of the head are different. The soft parts of *Tribura russula* are: iris dark greyish brown; upper mandible and point of lower mandible blackish, sides of upper mandible and lower mandible pink, the lower mandible yellow towards the gape; legs pink. Total length of six, measured in the flesh:—♂. 5·7, 5·8, 5·9 inches; ♀. 5·6, 5·7, 5·9 inches.

47. Cettia canturiens (Swinhoe).

Two were shot at Kuatun on the 19th May, 1897, by our collectors. On the last trip, during a walk over the grass-lands, one of them declared he could hear the bird's song. It must be rare there as a breeding species.

48. Cettia sinensis La Touche.

Examples in breeding-plumage are very white underneath, with the flanks of a much lighter tint than winter birds. Legs flesh-colour; feet darker; claws grey.

This species is common in winter on the lower hills and in the valleys of Fohkien; and also in summer in the valley of Upper Kuatun, about the lower limit of the grass-lands, from 4000 to 5000 feet. Its curious call was constantly heard from the thorny thickets and thick brushwood in that locality, the bird being very difficult to shoot or even see. Mr. Styan has described in 'The Ibis' (1891, p. 341) the song of the Yangtze *Cettia*, which is probably the same bird as our Fohkien species. The call of our bird is of the same kind, but we syllablized it somewhat differently, making out the calls to resemble the following: "Chēēē-wichee [long pause], chēēē-wichew." Our collectors called it the "Chiwichee." On previous occasions they collected many specimens, both on the Kuatun grassland limit and in another locality, some miles from Kuatun on the Kiangsi frontier, which they said was lower than Kuatun. Young and moulting birds were shot in October 1896.

We obtained three nests during the last trip. Two were found on the 4th May. One of these, Chunkai told me, had been discovered by a native, who, taking it to be a rat's nest, half destroyed it. Chunkai, on rediscovering it, found an egg inside. He explained that the bird, being about to lay, had repaired the nest, laid her egg, and then deserted it! It is more likely that the first finder did not notice that an egg had already been laid. We took this nest on the 8th of May; it was in a tea-field, built in a tea-bush. It had originally been a domed nest, and the remains were a ragged cup of bamboo-leaves wrapped up in moss. We took the second nest on the 10th May. It was in the same plantation, placed in a tea-bush, not far from a bramble-covered brook that bordered a bamboo-plantation. The female was sitting, but a careful manœuvre on our part forced her to fly out in the open and she hid in a tea-plant, when a snapshot secured her without damage. The nest rested between the upright twigs near the top of the plant, and was very loosely fastened to these. It is a rough, domed, oval structure, with side-entrance, made of bamboo-leaves and coarse grass-blades, with a little fine grass and a few feathers (one of these a feather of *Bambusicola thoracica*) as lining. The total outer length of the nest is 5 inches; the outer diameter at the base of the aperture 3 inches; aperture about $1\frac{1}{2} \times 1\frac{3}{4}$ inch; egg-cavity about $1\frac{1}{2}$ inch deep; inner diameter a little under 2 inches. There were four eggs, slightly incubated. Another nest, with one incubated and two addled eggs, was brought to me by a native on the 15th May. It is similar to the last, even to the one feather of *B. thoracica*.

The egg-cavity is 1½ inch deep, and the inner diameter about 1¾ inch.

The eight eggs collected are of the usual *Cettia* type—chocolate-red, darker about the broad end. One of the four eggs taken with the second nest on the 10th May has a broad and very dark ring round the large end ; the other three eggs have this ring less marked, and are faintly freckled all over with a darker tint of chocolate-brown. The texture is rather glossy. The shape is ovate. One egg measures 0·71 × 0·51 inch, and three are 0·70 × 0·52.

49. Cettia brunnescens (Hume).

This little *Cettia* is found on Mt. David about the lower border of the high forest (alt., say, 5500 to 6000 feet) and breeds there. The soft parts of specimens shot in this mountain are : iris dark brown ; upper mandible and tip of lower mandible brownish, lower mandible and sides of upper mandible yellow ; legs dark yellow ; claws grey. The young of *C. sinensis* are curiously like this species, but they can be at once distinguished by their large proportions.

Our collectors found a nest on the 12th May, 1897. It was placed on a small bamboo in very thick bamboo undergrowth, and our men had to shoot the female on the nest at close range, finding it impossible to secure her otherwise. Strange to say, although the nest with its four eggs was blown off the twigs on which it rested, two of the four eggs were found almost uninjured a yard from where the nest had been placed. The nest was no doubt originally domed—the remains consisting of a deep cup, made of coarse grass-blades and bamboo-leaves, with an inner cup of fine grass and a final lining of Pigeon's and "Huamei" feathers, some of which are worked into the grasses of the nest. The depth of the cup is about 2 inches, with a diameter of 2 inches, the outer diameter of the nest being about 2½ inches. The eggs are maroon or reddish chocolate ; one of these having a broad dark ring round the large end and indistinct dark markings all over. The shape of the egg is a broad ovate, with sharp apex ; while the colour is somewhat duller than that of eggs of the preceding species, having hardly any gloss. It measures 0·61 × 0·50 inch.

50. Urosphena squamiceps Swinhoe.

One example of this little Bush-Warbler was shot near Kuatun and brought to me on the 17th April last. Length 4·35 inches.

[To be continued.]

XIV.—*Field-notes on Birds collected in the Philippine Islands in* 1893–6.—Part II. By John Whitehead.

[Continued from p. 111.]

c. Passeres (Part II.).

80. Phylloscopus borealis (Blas.). (Grant, Ibis, 1894, pp. 408, 507; 1895, p. 443; 1896, pp. 113, 464.)

A common migrant from the north, dispersed over the Eastern Archipelago during the winter months. It has been obtained in most of the Philippine Islands, and doubtless occurs in those islands from which it has not yet been recorded.

81. Acrocephalus orientalis (Temm. & Schl.). (Grant, Ibis, 1895, p. 443.)

Of this Chinese winter migrant a specimen was shot in Abra on 15th November. This Reed-Warbler has a very extensive range among the Philippines and Malay Archipelago during its migrations.

82. Locustella fasciolata (Gray). (Grant, Ibis, 1894, p. 408.)

This Grasshopper-Warbler is also a winter migrant to the Philippines, but, owing to its skulking habits, it is seldom observed, and has hitherto been recorded only from Luzon and Marinduque. My specimen was shot in a bamboo-thicket on Monte Arayat in December.

83. Locustella ochotensis (Midd.). (Grant, Ibis, 1895, p. 465.)

Also a winter migrant met with by me on the Baco River, in Mindoro: it frequented the coarse grass and reeds at the edge of the river, and seemed much more lively towards sunset, when I noticed several birds fly to and fro across the stream.

84. Lusciniola seebohmi Grant, Ibis, 1895, p. 443.

Of such a skulking dull-coloured little Warbler it would be impossible to write much. The unique specimen in the collection was obtained by mere chance by one of my collectors, at an altitude of 6000 feet in the highlands of Lepanto (North Luzon). It was shot in a thick patch of coarse grass, and my hunter was under the impression that he had secured the more common *Cettia seebohmi* until he brought the bird to me, when I made him aware of the treasure he had thus unwittingly obtained.

Iris brown; upper mandible dull black, lower greyish white; feet pale brown, soles greyish white.

85. Cettia seebohmi Grant, Ibis, 1894, p. 507; 1895, p. 444.

This small Warbler is by no means uncommon on the steep mountain-sides in Central North Luzon, where it is met with from 4000 to 7000 feet. It is a busy little bird, but seldom shows itself, frequenting the most tangled and overgrown spots it can find, from whence its sharp note, "chick chick," may often be heard. To pick these small birds out of a thick tangle without absolutely destroying them—even with a small collecting-gun—is often the work of an hour. At times the collector is obliged to retire, without being able to circumvent them.

Iris dark hazel; upper mandible black, lower mandible and feet flesh-colour.

86. Cettia canturiens (Swinh.). (Grant, Ibis, 1894, p. 508; 1895, p. 444.)

This is a rather common winter visitor in North Luzon, my specimens being obtained in the mountains, and one of them at an altitude of 5000 feet. In February I met with it on the banks of a small river, where it was fairly common in some willow-like bushes.

87. GEOCICHLA VARIA (Pall.). (Grant, Ibis, 1895, p. 445.)

I obtained my first specimens of White's Thrush in the highlands of Lepanto, at an altitude of between 6000 and 8000 feet. The bird is somewhat rare in the Luzon highlands, to which it is a winter migrant from China and Japan. As yet it has only been recorded from Luzon.

Iris black; upper mandible dark brown, lower greyish white; feet dull pinkish brown.

88. TURDUS THOMASSONI Seebohm.

Merula thomassoni Grant, Ibis, 1894, p. 508; 1895, p. 445.

The resident Philippine Thrushes will doubtless prove to be the most interesting of highland forms in the whole group. At present I have only explored the mountain-regions of three of the principal islands—Luzon, Mindoro, and Negros. On the first two we find the highland ornis nearly identical, *Stoparola, Muscicapula, Chlorura, Hyloterpe, Lanius,* and several other genera and species being common to the two islands; but two Blackbirds more distinct than those of Luzon and Mindoro it would be difficult to find. In Negros, again, the Blackbird is quite distinct from either, and doubtless most of those islands which have mountain-ranges of over 6000 feet will also possess their own peculiar species.

This handsome Blackbird was first obtained in Benguet; it was again met with in Lepanto, and was common on the summit of Monte Data. It frequents the thick stunted bush on the mountain-sides, where it finds the many berry-bearing shrubs on which it chiefly subsists.

♂. Iris dark brown; orbital skin, bill, and feet bright king's yellow; in the ♀ the yellow is duller.

89. TURDUS OBSCURUS Gmel. (Grant, Ibis, 1896, p. 545.)

Merula obscura (Gmel.). (Grant, Ibis, 1895, p. 445.)

A winter migrant to the Philippines, occurring in large flocks in the high mountains of Luzon and Negros; in the latter island it was plentiful as late as the 22nd April. This Thrush will doubtless be found to extend its migrations over the whole of the Philippines, as it is very common further south, in the island of Borneo, during the northern winter.

90. Turdus chrysolaus (Temm.).

Merula chrysolaus (Temm.). (Grant, Ibis, 1895, p. 445.)

A few specimens of this Thrush were met with on the summit of Monte Data mingling with flocks of *T. obscurus*. This migrant from Japan and Siberia has hitherto been recorded only from Luzon.

Iris dark brown; bill brown, edged with yellow; legs pinkish brown.

91. Turdus mindorensis Grant, Ibis, 1896, p. 465.

This Blackbird is common on Monte Dulungan in Mindoro, after an altitude of 4000 feet is passed, and is probably found as high as 8000 feet, which is about the approximate height of this mountain. The highest point reached by me was 6000 feet, where the species was still to be met with. It frequented the thick dark forest in this rainy region. At the time of our visit (November) many of the young were moulting to their adult plumage. I have now met with Blackbirds in several tropical islands, but though the species bear little resemblance to each other when adult, the habits of those species found in Java, Borneo, and the Philippines differ little from those of our well-known garden-friend.

Iris dark-brown; orbital skin greenish yellow; bill king's yellow; legs in front yellowish brown, the back, soles of the feet, and scale-joints being bright yellow.

92. Turdus nigrorum Grant, Ibis, 1896, p. 544.

This dull, uniformly-plumaged *Turdus* was met with near the summit of Canloön volcano, where it was not uncommon. In the month of April we found a nest containing two eggs, which are beautifully figured in this journal (1898, pl. v. figs. 8 & 9). We also found another nest later on in the month containing young, and obtained fully-fledged young during the same month.

Iris dark brown; orbital skin bright sulphur-yellow; bill bright yellow; feet yellow.

93. Calliope camtschatkensis (Gmel.). (Grant, Ibis, 1894, p. 508; 1895, p. 445.)

This beautiful migrant from the north is common in the highlands of Luzon, being met with from the coast-line up to the summit of the highest mountains. It is shy and easily alarmed, passing most of its time in the thick tangled growth, where pursuit is almost impossible. I have seen this species on the slopes of Monte Dulungan, in Mindoro, and in Negros (within a few yards) in a native garden. At Cape Engaño, in the month of May (30th), a female of this species flew into my tent and settled for a moment on one of my collecting-boxes: the birds were then migrating north, and were common in some low plants amongst the sea-drift. The natives call this bird "Kerin," a word which resembles its note, but it also has an alarm-cry, not unlike the croak of a frog. It is a frequenter in North Luzon of the overgrown banks of rocky streams, and is decidedly more active after sunset, flying about after dark, when its note "kerin" may be heard.

Iris and upper mandible dark brown, lower mandible and feet light brown.

94. Monticola solitarius (P. L. S. Müller). (Grant, Ibis, 1894, p. 509.)

This species is a winter migrant to the Philippines, though it is possible that it may breed among the rocky mountains of North Luzon. It has been recorded from most of the Philippine Islands, and extends its winter wanderings much further south.

95. Hypsipetes fugensis Grant, Ibis, 1896, p. 113.

This species was obtained on Fuga Island, to the north of Luzon, to which island we were blown by adverse winds one night in April, on our voyage to Cape Engaño. It was fairly common in the thick bush which fringes the shore of Fuga Island, and I was first attracted by its peculiar harsh note.

Iris hazel; bill dusky brown; legs of a paler dusky brown.

96. Iole everetti (Tweedd.). (Grant, Ibis, 1897, p. 228.)

Fairly common in the big forests of Samar and Leite. This is another Mindanao species not found north of Samar, nor does it extend its range to the Negros-Cebu group. (*Cf.* Ibis, 1898, p. 228.)

97. Iole philippensis (Gmel.). (Grant, Ibis, 1894, p. 508; 1895, p. 445.)

One of the commonest birds in Luzon, frequenting the outskirts of forest and open places; it ranges up to the pine-forests at an altitude of nearly 6000 feet, and has a harsh and disagreeable note.

98. Iole guimarasensis Steere. (Grant, Ibis, 1896, p. 546.)

A subspecies of the above, obtained in Negros.

99. Iole mindorensis Steere. (Grant, Ibis, 1896, p. 466.)

This species was obtained in Mindoro at an altitude of 4500 feet.

100. Poliolophus urostictus (Salvad.). (Grant, Ibis, 1895, p. 253; 1896, p. 116.)

Fairly common in parts of Luzon, but nowhere abundant. This Bulbul is found in or about the borders of old forest; it is a bird of the lowlands. The lemon-yellow eyelid adds much to the bird's beauty in life, but in dried skins it becomes black. This genus is apparently confined to the eastern islands of the archipelago, following the distribution of *Harpactes*, *Irena*, &c., from Cape Engaño to Basilan.

Iris dark brown; eye-wattle bright lemon-yellow; bill and feet black.

101. Pycnonotus goiavier (Scop.). (Grant, Ibis, 1894, p. 408; 1895, pp. 253, 446; 1897, p. 228.)

A common and widely-distributed species, occurring throughout the entire group. This Bulbul is very closely allied to *P. analis* of Borneo—though it is one of the species that has not been met with in the Palawan group. In the mountains *P. goiavier* reaches an altitude of 3000 feet.

102. Irena cyanogastra Vigors. (Grant, Ibis, 1896, p. 116.)

This handsome Blue-bird was met with in the thick forests of Cape Engaño. The Philippine *Irenæ* are more difficult to obtain than the species found in Borneo and Palawan, owing to their habit of keeping so much in the topmost branches of high forest-trees. The skin is also almost as tender as that of a Trogon, and a fall from the top of a forest-tree often entirely ruins the specimen. These birds are also easily alarmed and quickly disappear ; so that, but for their peculiar call-note, one might tramp the forest in vain. This species was known to my hunter as the "Villiareyni."

The Palawan *Irena* (*I. tweeddalii*) is closely allied to *I. criniger* of Borneo, both in coloration and in having a differently-coloured female; but the upper and lower tail-coverts are short, like those of the Philippine species, not reaching to and often beyond the tail. The *Irenæ* are only found in the western Philippines—Luzon, Samar, Leite, and Mindanao.

Iris scarlet-lake; bill and feet black.

103. Irena ellæ Steere. (Grant, Ibis, 1897, p. 228.)

Met with rarely in Samar, but in the mountains of North Leite the species was fairly common, frequenting at times even the lower growth ; but unfortunately during the time of our visit all birds were in full moult and quite useless.

Iris lake-red ; bill and feet black.

104. Brachypteryx poliogyna Grant, Ibis, 1895, p. 446, pl. xii. fig. 1.

During our first expedition to Benguet we did not meet with this species, owing to the want of suitable forest. In Lepanto we obtained specimens at from 6000 to 8000 feet in the oak-forests. In such forests the ground is fairly clear, affording the bird suitable hunting-grounds, but in the Benguet pine-forests the ground is covered with grass. This *Brachypteryx* was fairly plentiful on the table-topped summit of Monte Data, but it was difficult to obtain. It is partial to the vicinity of small streams, and the male is a beautiful songster; the song is short and is heard chiefly towards the break and close of day. *B. poliogyna* also occurs in the highlands of Mindoro and was obtained in the thick forests at 6000 feet.

Iris and bill black; feet dark brown.

105. Brachypteryx brunneiceps Grant, Ibis, 1896, p. 547.

This is the Negros form of the last species, the males differing slightly, but the females are sufficiently distinct from Luzon and Mindoro specimens. The Negros Shortwing was met with on the great active volcano of Canloön, inhabiting the forest just below the bare cone. There were several birds in the vicinity of our camp, but we never succeeded in shooting one, though we started daily in pursuit of them, as they were singing every few hours, beside the small rivulets which flow from the sides of the mountain. To shoot a *Brachypteryx* we found to be no easy matter, and many a time has the writer unsuccessfully tracked the little songster through the undergrowth, the dark colour of the birds making them quite invisible in the forest-shade. Though the Philippine *Brachypteryx* is notable for its extreme shyness, the Bornean species was especially remarkable for its tameness, hopping about one's very feet.

Iris dark brown; bill and feet black.

106. Chimarrhornis bicolor Grant, Ibis, 1894, p. 509, pl. xv. fig. 2; 1895, p. 446.

Our first specimen was obtained among some huge boulders in a mountain-torrent in Benguet. I remember the morning well; the sun had barely risen, my tyro of a collector—one Sebastian—had started off in front of me down stream, when bang went his gun and three small birds came flying over the big boulders up stream. I merely remarked to myself, "That ass Sebastian again!" and went on to the pine-forests alone. In the afternoon Sebastian brought in this beautiful Water-Redstart, but it was shot in the back so that I could not ascertain the sex. We obtained no more specimens until the highlands of Lepanto were reached, where, at an altitude of 5000 feet, we met with several, including the female, which is quite different in colour to the male.

Iris brown; bill black; feet brown.

107. Copsychus mindanensis (Gmel.). (Grant, Ibis, 1895, p. 448; 1896, p. 547.)

This Magpie-Robin is of wide distribution in the Philippines, being recorded from most of the islands; but I do not think it is so numerous as are the species found in Borneo and the Malay Straits in their respective countries. Like other members of the genus, the Philippine *Copsychus* delights in the vicinity of native villages, being seldom observed in or near forests.

108. Cittocincla luzoniensis (Kittl.). (Grant, Ibis, 1894, p. 408; 1895, pp. 254, 447; 1896, p. 116.)

Is fairly common in the thick lowland forests of Luzon, and at times reaches considerable elevations. I noticed a pair near the summit of Monte Arayat at an altitude of over 3000 feet. In the forests of Cape Engaño I was fortunate in finding two nests. The first was placed in a rotten, hollowed-out palm-stem, at a considerable distance from the entrance, and contained two hard-set eggs. The other was in a small stump, only a few inches from the ground, in a muddy forest-path, and contained two eggs, one of which is beautifully figured in this Journal (1898, pl. vi. fig. 4).

This species always seemed to be a wary bird and a frequenter of dark shady patches in the forests, where it is almost invisible, as it takes great care to keep its black back turned towards the enemy. It is very quick in its movements, and on the least alarm disappears into the sombre thickets. It was met with in Catanduanes; and this or an allied species, I have reason to believe, occurs on Monte Dulungan in Mindoro.

Iris dark brown; bill black; legs pinkish white.

109. Cittocincla nigrorum Grant, Ibis, 1896, p. 547.

This species was observed in the high dark forests about the base of Canloön, in Negros. The males of this genus are sufficiently difficult to shoot, but the females are more so;

and only four specimens of this species were secured, three of which were males. Though we were aware of their presence for weeks, it was only towards the end of our stay that the first bird was shot.

Iris and bill black; feet pinkish white.

110. Megalurus palustris (Horsf.). (Grant, Ibis, 1894, p. 510; 1895, pp. 254, 448.)

This species is common in Luzon in open marshy country: it was also met with up to 4000 feet in Benguet, frequenting the coarse high bamboo-grass, up the stems of which it works its way with a swinging side-to-side motion. When the top of the stem is reached (often stems of 8 or 9 feet), the bird sings its pleasant song, and shortly drops into the tangled grass-thicket, where its presence is made known by a few sharp notes uttered from time to time.

Iris light hazel; the upper mandible brown and the lower dull white; feet pinkish brown.

111. Megalurus ruficeps Tweedd. (Grant, Ibis, 1894, p. 510; 1895, p. 448.

The Red-headed *Megalurus*—unlike the last species, which has a wide geographical range—is apparently confined to the Philippines, and is perhaps a more skulking bird in its habits than *M. palustris*, being often found in the most tangled patches which are met with here and there in high forest. In the Luzon highlands it was not uncommon at 5000 feet, frequenting the deep fern-and-grass-choked gullies on the mountain-sides. I also met with it at 5000 feet in Mindoro in thick bamboo-tangles in the oak-forests.

Iris hazel; upper mandible black, lower white; feet dull pinkish brown.

112. Orthotomus frontalis Sharpe. (Grant, Ibis, 1897, p. 229.)

The Philippine Tailor-birds, of which no fewer than eight species have been described, are generally of skulking habits, being found in true forest and neglected clearings. In thick forests they frequent the bamboo-tangles and the carpet of big-leaved plants which cover the floor of many forests.

Orthotomus is difficult to obtain, as it is either too near to shoot or else keeps out of sight. The beautiful and well-known nests are placed in somewhat exposed positions; I have found them within a foot of the ground on the edge of a native path, and once on a small broad-leaved plant growing on a tiny island in a small stream. This species we obtained in Samar and Leite, in the high forest, frequenting the forest-carpet mentioned.

Iris light brown; upper mandible brownish black, lower greyish pink; legs pinkish brown.

113. Orthotomus derbianus Moore. (Grant, Ibis, 1894, p. 408; 1895, p. 254.)

This Tailor-bird is not rare in the forests and clearings of Central and South Luzon; it was common in the hemp-plantations of Albay, especially when the ground was well covered with ferns and other vegetation. This species also extends its range to the island of Catanduanes.

Iris bright hazel; bill brown; feet pinkish brown.

114. Orthotomus chloronotus Grant, Ibis, 1896, p. 117, pl. iii. fig. 1.

We obtained one specimen of this Tailor-bird in North Luzon at Cape Engaño, where doubtless it replaces *O. derbianus*.

115. Orthotomus castaneiceps Walden. (Grant, Ibis, 1896, p. 549.)

Met with at the base of Canloön volcano, where it was not uncommon in the big forests.

Iris light brown; upper mandible pinkish brown, lower pinkish white; legs pinkish brown, lighter on the hinder parts.

116. Orthotomus samarensis Steere. (Grant, Ibis, 1897, p. 228.)

This is one of the shyest of birds, and, but for its vocal powers, would be most difficult to obtain. It frequents neglected clearings among the coarse grass and ferns, where it creeps and hops about in this undergrowth, seldom appearing above the surface. My specimens were all males, which met their doom owing to their powerful and beautiful song, which was the only clue to their whereabouts. The female has never yet been obtained. That this Tailor-bird is a distinct form of the genus and not closely allied to the rest of the group is, I think, reasonably certain, as its different coloration and its powerful and beautiful song separate it from the rest of the genus.

Iris light brown; upper mandible dark brown, lower yellowish white; feet pinkish brown.

117. PHYLLERGATES CINEREICOLLIS Sharpe. (Grant, Ibis, 1894, p. 510; 1895, p. 448.)

This Kina Balu species was met with in Benguet at 6000 feet, frequenting the tangled masses of ferns and grass which choke the deep rain-cut gullies; on Monte Data at higher altitudes this bird was rare, only one specimen being obtained. The species may occur in Mindoro, but we failed to meet with it.

Iris dark brown; upper mandible black, lower mandible and feet yellowish flesh-colour.

118. CISTICOLA CISTICOLA (Temm.). (Grant, Ibis, 1894, p. 510.)

We obtained one specimen of this Fantailed Warbler in Benguet, at an altitude of 4000 feet, where doubtless further specimens might have been procured, but our time was so occupied with other work that we did not pay much attention to this species. *C. cisticola* is recorded from Mindanao and Bohol, and is common in Palawan.

Iris light hazel; bill brown; legs flesh-colour.

119. CISTICOLA EXILIS (Vig. & Horsf.). (Grant, Ibis, 1896, p. 117).

This Fantailed Warbler is both more common and more widely distributed over the Philippines than the last species, occurring in most of the islands; in Luzon it is plentiful on the lalang grass-covered hills.

Iris light brown; upper mandible brown, lower pinkish brown; feet yellowish pink.

120. PSEUDOTHARRHALEUS CAUDATUS Grant, Ibis, 1895, p. 448, pl. xiii.

The discovery of this interesting bird was made by me on the summit of Monte Data. Whether the bird is so scarce, or whether the difficulty of obtaining it is so great, I can only say that not more than three specimens were captured in the several months spent in the Luzon highlands. *P. caudatus* is allied to *Androphilus accentor* from Kina Balu, and perhaps both genera are not distantly related to *Accentor*. This species is a quiet, dull-coloured, creeping bird, frequenting the undergrowth in the oak-forests which clothe the summit of Monte Data.

Iris brown; bill black; feet brown.

121. ZOSTERORNIS WHITEHEADI Grant, Ibis, 1894, p. 510, pl. xv. fig. 1; 1895, p. 448.

During our first visit to Benguet we met with this species at from 4000 to 6000 feet, and again in the following year it was common in Lepanto. This *Zosterornis* frequents the thick tangled masses of high grass and small trees on the mountain-sides, and is also partial to small shrubs, though it is occasionally found in forests. It hunts the low growth in small parties, feeding on insects and fruits, and during its short flight from tree to tree the noise made by its wings is quite audible. *Z. whiteheadi* is perhaps confined to the western side of the great central cordillera of North Luzon.

Iris dark brown; bill black; legs olive-green.

122. ZOSTERORNIS STRIATUS Grant, Ibis, 1895, p. 110, pl. iv. fig. 1; 1896, p. 118.

This interesting and very distinct *Mixornis*-coloured member of the genus was first obtained in Isabella, a province of Central North Luzon. In habits it closely resembles *Z. whiteheadi*, frequenting the low growth and bamboo-tangles. It was also met with at Cape Engaño, so that its range is apparently along the eastern Cordillera of North Luzon.

Iris light brown; bill black; feet brownish green.

123. Zosterornis nigrocapitatus (Steere). (Grant, Ibis, 1897, p. 232.)

The Black-capped *Zosterornis* is apparently confined to the islands of Samar and Leite, where it is fairly common. Unlike the last two species, this, as well as *Z. dennistouni* and *Z. pygmæus,* frequents the lower branches of trees in thick forest, through which they hunt in small parties. (*Cf.* Ibis, 1898, p. 232.)

124. Zosterornis dennistouni Grant, Ibis, 1896, p. 118, pl. iii. fig. 2.

The Golden-capped *Zosterornis* was obtained in the forests of Cape Engaño ; it is closely allied to the last species and is of similar habits. This species probably ranges down the eastern Cordillera of Luzon, but its southern limit has yet to be ascertained.

Iris lake-red ; bill black ; legs greyish blue.

125. Zosterornis pygmæus Grant, Ibis, 1897, p. 232, pl. vi. fig. 1.

This species is a somewhat aberrant form, having a square *Zosterops*-like tail, instead of the graduated tail of the other members of the genus, but its nasal opening, bill, and bicoloured eye doubtless place it close to *Z. nigrocapitatus.* In habits it is similar to the last two species, but it is a much rarer bird in the forests of Samar and Leite. (*Cf.* Ibis, 1898, p. 232.)

126. Macronus mindanensis Steere. (Grant, Ibis, 1897, p. 231.)

Fairly common in the dark forests of Samar and Leite, where it frequents the tangles and low plants near the ground, among which it obtains its daily bread. A nest found in Samar contained three eggs, which hatched off in my room in a few hours. (*Cf.* Ibis, 1897, p. 231.)

127. Ptilocichla minuta B. & W. (Grant, Ibis, 1897, p. 230.)

This rare Timeliine bird was obtained in Samar and Leite, and seemed to be more abundant in the latter island, where several specimens were obtained in the mountain-forests at an altitude of 1000 feet. This bird is, as might be expected, a frequenter of the ground and low growth. In Samar and Leite the forests are often thickly covered below with broad-leaved plants, making a secure retreat for *Ptilocichla*. In Leite we devoted several mornings to its pursuit, and bagged five adult specimens. Its note is a sharp "chick-chick." The birds have a distinct walk like some other Timeliines. (*Cf.* Ibis, 1898, p. 231.)

128. Parus elegans Less. (Grant, Ibis, 1894, pp. 408, 511; 1895, pp. 254, 449; 1896, pp. 467, 549.)

In those islands from which this pretty Titmouse has been recorded it is such a common bird that I should be inclined to doubt its existence in Samar and Leite, islands which have been visited by numerous collectors, and from which, according to Dr. Worcester, no fewer than 150 species are known. If the species does not occur in Samar, it is probably absent from Mindanao, though its presence in several of the Sulu Islands is interesting. The birds from the various islands are almost exactly the same, though several of my Negros specimens have a good deal more yellow on the back. In Luzon this Titmouse has a very extended range, being as common in the forests on the sea-coast as it is on the top of Monte Data at 8000 feet; in Mindoro and Negros it also ranges from the sea-level to the tops of the highest mountains. In the highlands of Luzon it joins the hunting-parties formed by many different genera of birds which search the pine-forests. Though I saw a pair evidently building a nest in February, I was unable to find one completed, and we never succeeded in taking the eggs.

Iris dark brown; bill black; feet lead-blue.

129. Parus semilarvatus (Salvad.). (Grant, Ibis, 1894, p. 408; 1895, p. 111; 1896, p. 119.)

This very distinct Titmouse is probably confined to Luzon, perhaps to the north and central districts of that island. In North Luzon we met with it at Cape Engaño and in Isabella, in Central Luzon on Monte Arayat; it seemed to be absent from the provinces to the west of the great central cordillera. This Titmouse generally frequents the top of lofty forest-trees in pairs or families; it is therefore difficult to obtain.

130. HYLOTERPE PHILIPPINENSIS Walden. (Grant, Ibis, 1894, p. 409; 1895, p. 254; 1897, p. 234.)

This Bush-Shrike frequents the lower growth of big forest, where it is by no means uncommon. We obtained a nest and eggs in Samar; an excellent figure of the egg is given in this Journal (Ibis, 1898, pl. v. fig. 1), and the egg shows strong affinities to that of *Lanius*, to which genus *Hyloterpe* is doubtless allied. Its habits are perhaps more those of a Flycatcher than a Shrike, as it frequents the low growth in forests, never perching in the open as Shrikes do. A peculiar point in the distribution of this species is that, though it is recorded from Siquijor by Dr. Worcester, it is unknown from the Negros-Cebu group, and has not yet been recorded from Mindoro.

131. HYLOTERPE WINCHELLI B. & W. (Grant, Ibis, 1896, p. 549.)

Met with by us from the base to the limit of tree-growth on Canloöon volcano; like the last species, it frequents the lower growth in old forest. This species belongs to the brown-backed members of the genus represented in Borneo, Palawan, and Sulu, so it is probably of Bornean origin.

Iris and bill black; feet greyish blue, with a pale pink tinge.

132. HYLOTERPE ALBIVENTRIS Grant, Ibis, 1894, p. 511; 1895, p. 449; 1896, p. 467.

This species was met by us in the mountain districts of North Luzon, ranging from the stunted forests at an elevation of 500 feet in Abra up to the pines and oaks which cover the mountain-tops at 8000 feet. In the highlands it helps to swell the miscellaneous flocks of insectivorous birds which hunt the pine-forest. This species was also fairly common in the Mindoro highlands at 4500 feet.

Iris dark brown; bill black; feet lead-blue.

133. Lanius lucionensis Linn. (Grant, Ibis, 1894, p. 512; 1896, p. 119.)

A common and widely-distributed species in the Philippines, frequenting open country and native gardens.

134. Lanius nasutus Scop. (Grant, Ibis, 1894, p. 512; 1895, p. 450.)

Common in Luzon, the only essential to its distribution being open country. Its habits are those of a true Shrike: it likes to perch on the top of some bush, from which it can obtain a good look-out for its prey. This species was common in the mountains of North Luzon up to 6000 feet.

Iris, bill, and feet black.

135. Lanius validirostris Grant, Ibis, 1894, p. 512; 1895, p. 450.

This Shrike, though found inhabiting the same districts as the last species, differs from it entirely in its habits. It frequents the oak- and pine-forests in North Luzon from 4000 to nearly 8000 feet, and in these forests it is somewhat rare. We again discovered the species in Mindoro at 5000 feet on Monte Dulungan in similar forest.

Iris dark brown; bill black, base of lower mandible pinkish; feet black.

136. Rhabdornis mystacalis (Temm.). (Grant, Ibis, 1894, p. 409; 1895, pp. 256, 450; 1896, p. 119.)

The first time I met with *Rhabdornis* was on Monte Arayat, and at the time I considered it to be an aberrant form of *Arachnothera*. This idea was rather strengthened by further observation, for in Isabella I noticed the bird feeding and reaching forward among flowers, much as *Arachnothera* does. In Negros, however, one of my hunters gave me the unsolicited information that a bird he had shot was building a nest in the hole of a tree; on the following day his companion pointed the place out to me, and I have every reason to believe that these men were telling the truth. The importance of this information was great, as it would place *Rhabdornis* in the position assigned to it by Dr. Gadow, namely, among the Creepers. The tongue is brush-tipped, after the manner of insectivorous birds which feed among flowers.

This Flower-Creeper is fairly common in Luzon, where it frequents true forest; the same species occurs in the Negros group of islands, but as yet no member of the genus has been recorded from Mindoro. The next species takes its place in the Samar-Mindanao group.

137. RHABDORNIS MINOR Grant, Ibis, 1897, p. 234.

Occasionally met with in the forests of Samar and Leite; in habits it resembles *R. mystacalis*. *R. minor* is also known from Mindanao. (*Cf.* Ibis, 1897, p. 235.)

138. RHABDORNIS INORNATUS Grant, Ibis, 1897, p. 235, pl. vi. fig. 2.

Though constantly on the look-out for this bird, we obtained only three males in almost as many months. This species inhabits the same forests as *R. minor* in Samar; we did not obtain it in Leite, where it doubtless occurs. (*Cf.* Ibis, 1897, p. 235.)

139. DENDROPHILA ŒNOCHLAMYS Sharpe. (Grant, Ibis, 1896, p. 550.)

Fairly common in the forests at the base of Canloön volcano, Negros, and ascending that mountain as far as the trees grow, which is to over 6000 feet, the birds from the various elevations being similar in plumage.

Iris straw-yellow; orbital skin on bill greenish gamboge-yellow, but the bill of a greener tint and tipped with brown; feet dark olive-green.

140. DENDROPHILA MESOLEUCA Grant, Ibis, 1894, p. 512; 1895, pp. 111, 450, pl. iv. fig. 2; 1896, p. 119.

Common in the mountains of North Luzon, being found up to 8000 feet on Monte Data. A series from Luzon shows us that birds collected on the coast cannot be distinguished from *D. œnochlamys*; that specimens collected at 1000 feet can hardly be separated from that species, and that they become *D. mesoleuca* in the highlands at an altitude of 5000 or 6000 feet; while those collected still higher at 8000 feet are almost white on the underside, and have the white streak on the mantle very distinct. Mr. Grant believes these differences in Luzon birds to be due to age, the most adult birds being the whitest; but I do not think that he would have described the coast-birds as immature if he had not first seen and described the highland specimens.

In my opinion this difference of coloration is entirely due to altitude, and coast-birds, be they ever so old, would never become white. This is a most interesting instance of colour-evolution, as the intermediate steps are not wanting in which *D. œnochlamys* of the Luzon coast-districts becomes *D. mesoleuca* as it reaches higher altitudes.

That the Negros Nuthatches show no change in plumage as they reach higher elevations is not so strange as it may at first seem. In Negros the mountains form a volcanic backbone of less than 7000 feet; while in Luzon we find highlands of greater area than the entire island of Negros, of much greater altitude, and of apparently greater antiquity, isolated from the coast by barren ranges of grass-covered hills to the west, and to the east and south by broad, treeless, grass-covered plains, thus assisting to isolate the highland forms. The Negros Nuthatches might go up and down these mountain-sides in a day without ever quitting the forests, and therefore none of the birds gain distinctive coloration through lengthened isolation at high elevations.

Iris straw-yellow; orbital skin and bill greenish yellow; feet olive-green.

141. DENDROPHILA LILACEA Whitehead.

Dendrophila œnochlamys Grant, Ibis, 1897, p. 235.

Dendrophila lilacea Whitehead, Bull. B. O. C. vi. p. xlix.

I described the specimens of *Dendrophila* collected by me in Samar and Leite under the name of *D. lilacea*, as they are quite distinct in the coloration of the underparts from the birds collected in Negros, being of a bright glossy lilac, perhaps nearer *D. corallipes* of Borneo. *D. lilacea* occurs also in Basilan, but I have not seen any examples from Mindanao. (*Cf.* Ibis, 1897, p. 451.)

142. ÆTHOPYGA MAGNIFICA Sharpe. (Grant, Ibis, 1896, p. 551.)

This handsome Sun-bird was fairly common about the base of Canloön, where it frequents the edges of the forest. I was fortunate in watching a pair building their nest among some forest-drift and creepers at the foot of a huge forest-tree, only some three feet from the ground; it contained three terra-cotta-coloured eggs on 15th April (Ibis, 1898, pl. v. figs. 5 and 6).

Iris black; upper mandible and nostrils dark brown, red towards the tip, lower mandible dull pinkish yellow, yellower at the base; feet brownish black.

143. ÆTHOPYGA BELLA Tweedd. (Grant, Ibis, 1897, p. 236.)

Scarce in Samar, frequenting the forests and their outskirts. On 19th July we found a nest dangling at the end of a briar in an open locality. The egg is figured in the 'Ibis' for 1898, pl. v. fig. 10.

144. ÆTHOPYGA FLAVIPECTUS Grant, Ibis, 1894, p. 513; 1895, p. 111, pl. v. fig. 1; 1896, p. 467.

Several males of this Sun-bird were obtained at an altitude of 3000 feet in Benguet. We met with the species again on the slopes of Monte Dulungan in Mindoro at 4500 feet, but it was here somewhat rare; the female was also obtained for the first time.

145. EUDREPANIS PULCHERRIMA Sharpe. (Grant, Ibis, 1897, p. 236.)

Met with in Samar and Leite. In Samar a nest with eggs was taken on the 26th June. (*Cf.* Ibis, 1898, p. 242.)

146. EUDREPANIS JEFFERYI Grant, Ibis, 1894, p. 513; 1895, pp. 111, 451, pl. v. fig. 2.

This species was met with in Benguet at nearly 5000 feet. In Lepanto it was also obtained as high as 7500 feet, where it was partial to some scarlet tube-formed flowers, which were searched busily for insects. A nest was in course of construction in the low forest about the middle of February, but unfortunately was soon forsaken; it was of the usual Honey-sucker form and composed of green moss.

Iris brick-red; bill and feet black.

147. CINNYRIS JUGULARIS (Linn.). (Grant, Ibis, 1895, pp. 255, 451.)

Cinnyris obscurior Grant, Ibis, 1894, p. 514.

This Honey-sucker is widely distributed throughout the Philippines. It prefers coast-districts, and is especially fond of coconut-palms. We met with the species as high as 3000 feet in Benguet.

Iris dark brown; bill and feet black.

148. CINNYRIS FLAGRANS (Oust.).

Cinnyris excellens Grant, Ibis, 1895, p. 255; 1896, p. 120.

This handsome little bird is fairly common in Albay and in the neighbouring island of Catanduanes; it ranges up the east coast of Luzon, being met with as far north as Cape Engaño. Like the last species, it is partial to coconut-palms, finding its food among the flowers.

Iris, bill, and feet black.

149. CINNYRIS SPERATA (Linn.). (Grant, Ibis, 1895, p. 254; 1896, p. 468; 1897, p. 237.)

A widely-distributed species, ranging over the entire archipelago and also into Palawan; but in North Luzon its place is taken by the next species.

150. CINNYRIS WHITEHEADI Grant, Ibis, 1894, p. 514, pl. xiv. fig. 1; 1895, p. 451; 1896, p. 120.

Common among the highlands of Luzon, attaining an elevation of 5000 feet; it was also common on the coast at Cape Engaño, and thus it is spread over the entire north of Luzon.

Iris dark hazel; bill and feet black.

151. ARACHNOTHERA FLAMMIFERA Tweedd. (Grant, Ibis, 1897, p. 238.)

Somewhat scarce in the forests of Samar and Leite. (*Cf.* Ibis, 1897, p. 238.)

152. Arachnothera philippinensis (Steere). (Grant, Ibis, 1897, p. 237.)

Met with occasionally in the forests of Samar and Leite. (*Cf.* Ibis, 1897, p. 237.)

153. Anthothreptes griseigularis Tweedd. (Grant, Ibis, 1894, p. 111; 1895, p. 451; 1896, p. 120; 1897, p. 238.)

Met with in Samar and North Luzon, where the species is somewhat rare.

Iris brick-red; bill black; feet olive-brown.

154. Zosterops meyeni Bonap. (Grant, Ibis, 1894, p. 515; 1895, p. 452.)

The genus *Zosterops* is well developed in the Philippines, there being no less than seven recognized species in the group, mostly very distinct from each other. The genus is perhaps most numerous in mountainous country, where it is to be met with as high as the vegetation is able to gain a foothold. In habits *Zosterops* is gregarious, passing through the tops of the trees in pursuit of its food in fairly large flocks; it also at times frequents the low jungle in neglected clearings, when it is by no means shy, but perhaps rather inquisitive.

Z. meyeni was common in the highlands of Luzon, where it frequented the pine-forests in small flocks, mingled, perhaps, with eight or nine other species. I watched a pair taking their morning bath in the dew that had formed on a tree-fern one morning within a few feet. On 24th January we found a nest, containing two young ready to fly, on the summit of Monte Data.

Iris stone-grey; bill at base lead-blue, tipped with black; feet lead-blue.

155. Zosterops siquijorensis B. & W. (Grant, Ibis, 1896, p. 551.)

This large Silver-eye was very common in the forest just below the bare cone of Canloön, at an altitude of 6000 feet; it was very tame, especially towards evening, when it roosted in some thick cistus-like shrubs, near the ground. We discovered many old nests in these bushes, and two containing young just hatched, on the 12th April, which were removed by vermin of some sort before they could fly.

Iris stone-grey ; upper mandible black, base of lower light blue ; feet greyish cobalt.

156. Zosterops nigrorum Tweedd. (Grant, Ibis, 1896, p. 553.)

Like the last species, this is also met with on Canloöu volcano, but does not ascend the mountain to any great altitude. This little bird is somewhat difficult to obtain, owing to the great height of the trees which it frequents.

Iris pale brown ; bill tipped with black ; base of bill and feet slate-blue.

157. Zosterops basilanica Steere. (Grant, Ibis, 1897, p. 238.)

That the Samar-Leite *Zosterops* should be the same species as that found in Mindoro and Basilan and several islands of the Sulu group is not surprising, considering the number of species common to all these islands. On Samar and Leite this species is fairly common.

158. Zosterops luzonica Grant, Ibis, 1895, p. 257 ; 1896, p. 120.

Our specimens of this Silver-eye were collected on and about the base of the Mayon volcano in South Luzon ; the birds were mostly in moult. This species is closely allied to *Z. aureiloris,* but is not nearly so brilliant in coloration. That two species of the same group of *Zosterops* should be met with in the island of Luzon is not to be wondered at, considering the size of the island and the height of its mountain-ranges. This species probably ranges up the east coast of Luzon, as it was obtained by us at Cape Engaño at the extreme north-east of the island.

Iris and upper mandible black ; lower mandible and feet lead-blue.

159. Zosterops aureiloris Grant, Ibis, 1895, p. 453 ; 1896, p. 468.

This brilliantly-coloured *Zosterops* is fairly numerous at an altitude of 1000 feet in Abra, and it was not met with above this height in Luzon; but in Mindoro it was obtained at nearly 5000 feet. The area over which the species ranges is therefore bounded by the great central range of North Luzon to the east. That this species, together with over half a dozen other highland forms, should be found in Mindoro and Luzon, indicates that at some period the high mountain-ranges of Western Luzon and those of Mindoro must have been united.

Iris dark brown; upper mandible slate-blue, tipped with black; legs and half of the lower mandible lead-blue; soles of feet yellow.

160. DICÆUM HÆMATOSTICTUM (Sharpe). (Grant, Ibis, 1896, p. 553.)

Met with in Negros, at the base of Canloön volcano. A nest was taken on the 19th of March, containing one egg; the egg is of quite a different type to those laid by the next group of Dicæums (the yellow-breasted group), which lay a pure white egg. This nest is in the Museum and the egg is figured in this Journal (1898, pl. vi. fig. 2).

Iris dark brown; bill and feet black.

161. DICÆUM RUBRIVENTER Less. (Grant, Ibis, 1895, pp. 258, 453; 1896, p. 120; 1897, p. 238.)

This is a common species in Luzon, frequenting the edges of forests and open places, where it finds the small berry-bearing trees, on the fruit of which it chiefly subsists. The intestines of every Dicæum examined by me are very large compared with the size of the bird, the reason of this being apparently that the fruits are swallowed whole and the stones passed through the stomach. This species has a wide range in the Philippines, from the North of Luzon to Basilan on the east, and, curiously enough, occurring in Masbate and Cebu; in the latter island one would have expected *D. hæmatostictum* of Negros. I doubt if *D. retrocinctum* has ever been met with in Luzon, though the British Museum contains specimens labelled "Manila"; but in old days all birds were thus labelled, Manila being the place of export. This Dicæum is the Mindoro species and it is improbable that it occurs out of that island.

162. Dicæum dorsale Sharpe. (Grant, Ibis, 1896, p. 553.)

This species was obtained in Negros, at the base of Canloöu, where it frequented the forest and its borders.

Iris dark brown; bill and feet black.

163. Dicæum xanthopygium Tweedd. (Grant, Ibis, 1895, p. 452; 1896, p. 120.)

This was somewhat rare in North Luzon, but perhaps more plentiful at Cape Engaño.

Iris black; upper mandible and feet black, lower mandible at the base brownish yellow.

164. Dicæum cinereigulare Tweedd. (Grant, Ibis, 1897, p. 239.)

Common in Samar and Leite, where three nests were taken towards the end of July. The nest is composed on the outside of green moss, that of *D. hæmatostictum* of white lichen.

165. Dicæum everetti Tweedd. (Grant, Ibis, 1897, p. 239.)

D. everetti is quite an aberrant form of Philippine Dicæum, being brown on the back and whitish on the breast. In Samar I found a nest which was fastened to the stem of some parasitic ferns growing about 9 feet up on the trunk of a tree. The nest contained two young birds.

Iris light brown; bill and feet black.

166. Dicæum obscurum Grant, Ibis, 1894, p. 515.

This Dicæum, a rather large species of the genus, is wonderfully solid and heavy for its size. It frequented the mountain-sides in Benguet at an altitude of about 5000 feet, where it was feeding on some berry-bearing shrubs. In Benguet it was rare, and we did not meet with it in Lepanto.

Iris brown; bill dark brown; feet dull pinkish brown.

167. Dicæum pygmæum (Kittl.). (Grant, Ibis, 1894, p. 515; 1895, p. 453; 1897, p. 239.)

Widely spread over the Philippine Archipelago, occurring also in Palawan and Balabac, but not yet recorded from Mindanao. In North Luzon it is common in the high mountains up to nearly 6000 feet, and in Lepanto we found a nest containing young birds on 14th February at nearly 5000 feet.

168. Dicæum luzoniense Grant, Ibis, 1894, p. 515; 1895, p. 453; 1897, p. 238.

This handsome species belongs to yet another group of the genus *Dicæum* found in the Philippines, a group having either metallic blue or green backs, generally confined to high mountains. *D. luzoniense* was first obtained in Benguet, and again met with in Lepanto on the summit of Monte Data. A form was obtained in the mountains of Samar which was a trifle smaller than the Luzon specimens.

169. Prionochilus olivaceus Tweedd. (Grant, Ibis, 1897, p. 239.)

Rare in Samar and Leite, only three specimens being obtained in the two expeditions.

Iris lake-red; upper mandible and feet black; lower mandible slate-blue.

170. Prionochilus bicolor Bourns & Worc.

Prionochilus inexpectatus Hartert. (Grant, Ibis, 1896, pp. 469, 553; 1897, p. 240.)

This bird was met with by us in Mindoro, Negros, Samar, and Leite, and *P. inexpectatus* Hartert, of Luzon and Mindoro, is probably the same species. It was first described by Messrs. Bourns and Worcester from Mindanao specimens. *P. bicolor* reaches an altitude of nearly 5000 feet in Mindoro, but in Samar and Negros our specimens were obtained in old forest at about 1000 feet.

Mindoro: Iris brown; bill black; feet brownish black (probably a young bird).

Samar: Iris pale vermilion; bill and feet black.

171. Piprisoma æruginosum B. & W. (Grant, Ibis, 1895, p. 454.)

The only specimen obtained was shot in the Province of

Abra on our journey to the Lepanto highlands. It was obtained by a mere chance, the native who killed it being under the impression that he had wasted a shot on the common *Muscicapa griseisticta,* of which this species is a perfect mimic; it was a wonder that the Indian did not throw it away. This *Piprisoma,* I expect, is a rare bird and easily overlooked, but its range seems to extend over the whole archipelago. In Dr. Worcester's distribution table, Luzon, Mindoro, Cebu, and Mindanao are the islands given in which it has been obtained.

Iris light hazel; bill light slate-blue; feet dark lead-blue.

172. Cotile sinensis (Gray). (Grant, Ibis, 1895, p. 111.)

Fairly common on the large rivers of North Luzon. We observed numbers entering their nesting-holes in the high banks of the Abra river on our return from Lepanto in the middle of February. Perhaps this Sand-Martin does not range much south of Manila in the Philippines, as it has not been met with in any of the other islands.

173. Hirundo gutturalis Scop. (Sharpe, Cat. B. x. p. 134.)

A winter migrant. Numbers were noticed going north at Cape Engaño on the 14th of May.

174. Hirundo javanica Sparrm. (Grant, Ibis, 1894, p. 516; 1895, p. 258 and p. 455.)

A resident of wide distribution in the Philippines and throughout the Malay Archipelago. I once found a pair nesting on a small island in the sea off Cape Engaño, the nest being attached to a hollowed-out rock. The birds had eggs; this was on the 17th of May.

175. Hirundo striolata Boie. (Grant, Ibis, 1894, p. 516.)

In the mountains of Benguet, at an altitude of 5000 feet, this species was fairly common among some high rocks, where I have little doubt the birds noticed by me were building their nests. In Central North Luzon I noticed large flocks perching on the telegraph-wires which traverse the open plains. I also saw a few birds, evidently migrating to China and the north, at Cape Engaño on the 14th of May.

176. Motacilla ocularis Swinhoe. (Sharpe, Cat. B. x. p. 497.)

I noticed a small flock of White Wagtails on my way up the Abra river on the evening of November the 8th, but as all my guns were packed up, I did not secure one. This and the next two species are northern winter migrants to the Philippines, and extend their migrations over most of the Malay Archipelago.

177. Motacilla melanope Pall. (Grant, Ibis, 1895, p. 258; 1896, p. 469.)

Common during the winter months; found on the rocky mountain-streams of Monte Data at nearly 8000 feet.

178. Motacilla flava Linn. (Grant, Ibis, 1895, p. 258.)

Common at Cape Engaño during the middle of May, when flocks of from 30 to 40 individuals were gathering together previous to their departure north, *viâ* the Batanes Islands. I noticed that the birds generally rested about the shore during the day; while towards sunset the flock would rise high in the air, and after a good deal of twittering and circling round, would head directly for the north over the sea.

179. Anthus maculatus Hodgs. (Grant, Ibis, 1894, p. 516.)

Very common in the pine-forests of Benguet, at an altitude of 6000 feet, during the winter months. These Pipits generally frequented the ground in small flocks, and when alarmed flew into the pine-trees, on the branches of which they walked about with ease.

Iris dark brown; upper mandible brown; lower mandible and feet pinkish brown.

180. Anthus gustavi Swinh. (Grant, Ibis, 1896, p. 554.)

Common in the forest at 7000 feet on Canloön volcano, Negros.

181. Anthus cervinus (Pall.). (Grant, Ibis, 1894, p. 516.)

A specimen in full moult was obtained in Benguet. This and the last two species are winter migrants to the Philippines, but the next species, *A. rufulus*, is, I am inclined to think, resident in the mountains.

182. Anthus rufulus Vieill. (Grant, Ibis, 1894, p. 516.)

This Pipit, unlike the last three species, is not met with in flocks in the Philippines, but singly or in pairs on the grass-covered mountainous districts of North Luzon, where doubtless it is resident, as in Java and other Malay islands. *A. rufulus* has been recorded from most of the islands in the archipelago.

183. Passer montanus Linn. (Sharpe, Cat. B. xii. p. 301.)

The Tree-Sparrow, I expect, has been introduced into the Philippines by the Chinese, being only at present known from the towns of Manila and Cebu, but doubtless its range will be rapidly extended. In the suburbs of Manila, when I first arrived, I only noticed some three pairs round about the Club-house, but before I left, three years later, it would not have been difficult to count over fifty Sparrows any day perched about the house. This Sparrow will probably be restricted in its distribution by that of bricks and mortar, as the small native leaf-houses are not suitable to its requirements, and nice cosy holes in trees are generally tenanted by most undesirable insects and reptiles in tropical lands.

184. Loxia luzoniensis Grant, Ibis, 1894, p. 516; 1895, p. 455.

The discovery of this Crossbill and the Bullfinch (*Pyrrhula leucogenys*) was doubtless the most interesting and unexpected success of my Philippine expedition. This small Crossbill is not rare when once the high mountains are reached, the pine-forests (*Pinus insularis*) being essential to its existence. The Philippine Crossbill begins to build towards the middle of December, and though we found several nests, we were unfortunately unable to secure the eggs. On the 20th of January, when camped out on Monte Data, one of my servants brought in a female Crossbill, which, judging by the state of the breast, I thought to be a nesting-bird, so I went with him to the place where he shot it. After a fruitless search, which lasted two hours, I sent the boy away and lay down beneath the pines, enjoying the warm sun, watching some Tits (*Parus elegans*), which were singing and busily engaged picking about among the branches. Now and then the whistling pipe of the new Bullfinch was heard, and a few entered the fir-tree directly over my head; they did not touch the cones, but worked for their food among the young shoots. Presently the male Crossbill perched in a tree close by, but flew away into the forest again. As he did not return, I took a stroll to one of the waterfalls which tumble for ever from the summit of Data's most western side; here several butterflies were disporting themselves, among them a Red Admiral, almost identical with the British species. When I returned to my position, after waiting some ten minutes, the Crossbill entered the tree on which he had perched before and settled on the side of a lump of lichen. This I knew must be the nest, so when my boy returned I sent him up the tree, and he reported four youngsters nearly fully fledged. Before he left the nest two of these flew away, and were met by their parent and encouraged to fly still further.

I found a nest in Benguet which contained eggs, but it was on the end of a pine-bough which stretched over the mountain-side, and could not be reached.

Ad. Iris, bill, and feet dark brown.

Juv. Bill yellowish green; feet dull flesh-colour.

185. PYRRHULA LEUCOGENYS Grant, Ibis, 1895, p. 455, pl. xiv.

During my first expedition to the highlands of Benguet I failed to meet with this interesting Bullfinch, the reason being the absence of the oak-forests, in which doubtless are the berry-bearing shrubs on which it feeds. Later on I found it fairly common on the summit of Monte Data: it was generally met with in small families of five or six, the young birds having almost changed into their adult plumage, a few brown feathers on the head being the only sign of immaturity. We left the mountain in February, doubtless before the nesting-time, which would be most likely in April, when the weather is milder in these mountains. The note of the Philippine Bullfinch is the same weak piping whistle as the note of the British species.

Iris black; bill black at tip, base whitish blue or dull yellowish white; feet brownish pink.

186. EMBERIZA SPODOCEPHALA (Pall.). (Grant, Ibis, 1895, p. 258.)

The only specimen of this Bunting known from the Philippines was shot in Catanduanes, to which island it is a winter migrant from the north, like the next two species.

187. EMBERIZA PUSILLA Pall. (Grant, Ibis, 1894, p. 517.)

A male in moult was obtained for the first time in the Philippines in Benguet, at an altitude of 4000 feet.

188. EMBERIZA SULPHURATA Temm. & Schl. (Grant, Ibis, 1894, p. 517.)

One specimen shot in a pine-forest in Benguet, at 6000 feet. This Bunting is also an addition to the Philippine avifauna.

189. ARTAMUS LEUCOGASTER (Wagl.). (Grant, Ibis, 1895, p. 258; 1896, p. 554; 1897, p. 240.)

This Swallow-Shrike is common throughout the Philippines, wherever the country is sufficiently cleared of trees. It frequents dead standing timber in small parties, and as many as five may generally be seen together—the three young and the adult pair. It is most affectionate to its own species, sitting closely huddled together on the bare tree-tops, but wages incessant warfare on all other birds that come within range: the larger the enemy the more valiant does this small bird become. Its nest and eggs are so Shrike-like that I agree with Dr. Sharpe in placing the genus *Artamus* near the Laniidæ.

190. Acridotheres cristatellus (Gmel.). (Sharpe, Cat. B. xiii. p. 92.)

A species imported by one of the Governors-General of the Philippines, for the purpose of destroying locusts. At present this Starling has not spread beyond the neighbourhood of Manila, where it is known as the "Martinez" (the Governor's name) by the Indians.

191. Sarcops calvus (Linn.). (Grant, Ibis, 1894, p. 517; 1895, p. 258 and p. 456; 1896, p. 469 and p. 554; 1897, p. 240.)

Quite one of the ornithological features of the Philippines. Like the Great Hornbill, this species has also been noticed by the Spaniards, and is known to them as the "Collato." It is supposed to learn to imitate the human voice, and for that reason it is often kept in a cage.

The Collato is a busy, lively bird, being found in numbers in the forests when its favourite fruit is ripe. It is also very partial to dead tree-trunks, nesting and roosting in the numerous Woodpeckers' borings. The noise made by the wings during flight is very audible. In Samar a pair were very busy prospecting some old posts within a few feet of our house, but we left before they had commenced to build. The note is a peculiar click, metallic but not displeasing. The species reaches an elevation of 3000 feet in Benguet.

192. Calornis panayensis (Scop.). (Grant, Ibis, 1895, p. 260 and p. 456.)

Found throughout the entire archipelago. More plentiful in the plantations and open districts, but visiting certain fruit-bearing forest-trees in large flocks. The species nests and roosts in the old tree-trunks which are bored by Woodpeckers; it is also very partial to dove-cots, filling up the boxes with grass and other nesting-materials, eggs and young in all stages being met with at the same time.

Iris vermilion; bill and feet black.

193. Munia jagori Cabanis. (Grant, Ibis, 1896, p. 554.)

Common and dispersed throughout the entire group; here, as elsewhere, a pest to rice-growers, frequenting the paddi-fields in large numbers.

Iris brown; bill almost white, with a bluish tinge; feet dull cobalt.

194. MUNIA FORMOSANA Swinh. (Grant, Ibis, 1895, p. 112.)

This Formosan species is apparently confined to the valley of the Rio Grande, in North Luzon.

Iris lake-red; bill and feet whitish blue.

195. MUNIA CABANISI Sharpe. (Grant, Ibis, 1895, p. 456.)

A very local species, only met with by us in the dried-up bed of the Rio del Abra, where it was feeding on the grass-seeds.

196. UROLONCHA EVERETTI (Tweedd.). (Grant, Ibis, 1895, p. 261; 1896, p. 555; 1897, p. 240.)

Though widely distributed in the Philippine Islands, this little Finch is never abundant, and is not met with in large flocks like *Munia jagori*.

Iris lake-brown; upper mandible black, lower whitish blue; feet dull cobalt-blue.

197. CHLORURA BRUNNEIVENTRIS Grant, Ibis, 1894, p. 518; 1895, p. 456; 1896, p. 470.

These small Bamboo-Sparrows are always difficult to obtain; being wary and of swift flight, they disappear in a second when alarmed. Amongst the bamboo-flowers (on which they feed) their movements are very slow and quiet, and it is only after one has found a number of bamboo-clumps in full flower, by carefully hiding and watching the flowers, that any success is obtained. My first specimens were collected in Benguet at an elevation of only 2000 feet, and we next met with the species again at 7600 feet on Monte Data, when a single specimen was secured. In Mindoro I shot a *Chlorura* in a pine-tree close to my camp, and noticed another some days previously feeding at the end of a pine-branch; this was at an elevation of 4500 feet. The note, which seems only to be uttered when the bird is on the wing, is "tsit, tsit," and is a somewhat hissing sound.

Iris dark brown; bill black; feet flesh-colour.

198. Alauda gulgula Frankl. (Grant, Ibis, 1895, p. 112.)

We found this species fairly common on some open grass-plains in Isabella, where it was nesting. Two nests were found under some grass-tufts, with eggs, on the 25th of May.

199. Mirafra philippinensis Wardlaw-Ramsay. (Grant, Ibis, 1894, p. 518.)

Scarce in Luzon. In Benguet I obtained a specimen at 4000 feet on a large semi-cultivated plain. I also noticed a few birds on the plains bordering the Rio Grande in North Luzon.

200. Pitta erythrogastra Temm. (Grant, Ibis, 1896, pp. 121, 470, 555; 1897, p. 240.)

Distributed throughout the Philippine group; also met with in Palawan and Balabac. This Pitta is more common in the belts of forest on the sea-coast than inland, but in Samar we met with it in the centre of the island at an elevation of 1500 feet.

In my opinion, *Pitta propinqua* of Sharpe is not a good species, though the late Mr. A. H. Everett supported Dr. Sharpe. In 'The Ibis' (1895, p. 29) Mr. Everett states that Balabac-Palawan birds, when compared with those from Luzon and Mindanao, have "the green tract on the backs of the former series forming a comparatively narrow band, whereas in the latter series it extends nearly to the rump. I have therefore no longer any doubt that *P. propinqua* differs sufficiently from *P. erythrogastra* to make it necessary that it should be separated." Mr. Grant, who also supports Dr. Sharpe (see Ibis, January 1896, p. 121), says, "It must, however, be stated that both forms were found by Mr. Whitehead in the island of Palawan," &c.

In the Philippines I obtained specimens from Luzon, Mindoro, Samar, and Negros. These birds often differ slightly in the amount of blue on chest and back, a specimen from Samar having less green on the back than any of my Palawan birds; but I fancy much of the difference is due to age, and more to the make of the skin. On examining the Balabac specimen of *P. propinqua* in the British Museum, collected by Mr. Everett, the first glance justifies the correctness of his remarks on the narrowness of the green tract; but further examination shows that this narrowness is entirely due to the make of the skin, the green feathers on the shoulders having been drawn up into the neck, so that the green appears to be of less extent than in other specimens.

201. Pitta kochi Brüggemann. (Grant, Ibis, 1895, p. 457.)

The rediscovery of this fine Pitta was one of the most interesting results of my journey to the highlands of North Luzon. In December 1894 we were collecting at 6000 feet, where much of the forest on the mountain-sides was pine, the ground below being quite open and covered with short grass. At first sight such country would seem to be no place for a Pitta, but here and there, in the deeper ravines, were thick patches, often of considerable extent, of evergreen oaks, with the ground below thickly covered with moss and an undergrowth of begonias and other plants. In these dark patches of forest my hunters told me they had seen a "Leuco" (which is the Tagalo name for a Pitta) with a bright red breast, but somehow they were always unfortunate, the Leuco being too quick for them. Nearly a month passed, and they were still unable to circumvent this supposed Leuco. Towards the beginning of January, 1896, I resolved to attack Monte Data, a great table-topped mountain, which I could plainly see from the Igorroti village of Bagnin in which we were living. In the wonderfully clear mountain atmosphere we could see not only that the summit of Data was drained by two considerable streams, which fell over the rocky precipitous side, but also that the mountain was well covered with thick oak-growth, with only a few patches of pine here and there.

After two days' hard work we reached the base of Monte Data, and the following morning I sent my boys to the summit to build the framework for our canvas-roofed house. When I had procured native porters on the following day, I started at daylight for the ascent. It was, I remember, just 9 A.M. when we reached the summit; the frost was still glittering on the herbage in shady places, and I thought to myself that the country on all sides looked as if it might yield any kind of avifauna.

For some days nothing was seen of the new Leuco, until one afternoon, as I was strolling quietly through the thick oak-forest, a bird flew up from the path and disappeared into the dark forest. I caught sight of a bluish-grey object and by its shape I knew it to be a Pitta. On my return the same bird left the path again, but this time I marked its direction and followed quickly and quietly. I soon saw a large Pitta sitting on the branch of a fallen tree, which at once flew to the ground and commenced feeding. A shot from my small collecting-gun secured it—an immature *Pitta kochi.*

The Igorroties living on the top of Data knew the bird well by the name of "Kong Kong," and secured by snares all the rest of my specimens, my own hunters failing to shoot one during the six weeks spent at this camp.

Pitta kochi is probably confined to the highest mountains of North Luzon, at an elevation of over 6000 feet. It may, however, be met with in Mindoro, as in that island at high elevations the same oak-forest exists, and many of the birds are identical with those of Luzon. My expedition to Mindoro was almost a failure, owing to the incessant rains.

Iris dark brown; bill blackish brown, at the base of lower mandible slate-blue, inside of mouth white; legs slate-blue; nails white.

202. PITTA ATRICAPILLA Less. (Grant, Ibis, 1895, p. 121; 1896, pp. 121, 555; 1897, p. 240.)

The distribution of this bird seems to agree with that of *P. erythrogastra,* the two species inhabiting the same forests, both on the coast and on the lower slopes of the mountains inland. The feet of a male shot at Cape Engaño were dull pinkish white; they are generally pale greyish blue.

203. Pitta steerii (Sharpe). (Grant, Ibis, 1897, p. 241.)

This Pitta (perhaps the most beautiful of the whole genus) was met with by us in the mountains of Central Samar. It delights in a country covered with huge forest, a fairly thick undergrowth, and the ground over which it hops a mass of moss-covered coral-limestone boulders, often of huge dimensions. The island of Gilolo, in which *Pitta maxima* is found, is, according to Dr. Wallace, of much the same formation. I myself was always ill in Samar, and was unable to do much outdoor work; but I once met with this Pitta in the forest, although so close that I was unable to shoot it. The young were fully fledged in June. This Pitta is called by the Bisayas of Samar "Babaqua," and is said to be more numerous from May to July in that island, so perhaps it is migratory. I doubt whether this species inhabits Leite, as the country traversed by us in that island was either a volcanic clay or covered with boulders of lava, no coral-limestone cropping out in the northern mountains.

Iris and bill black; feet light brown, pinkish at joints.

Juv. Claws, tip of bill, and gape orange.

204. Sarcophanops samarensis Steere. (Grant, Ibis, 1897, p. 242.)

This curious bird is by no means common in Samar and Leite, to which islands its distribution is probably confined. It frequents thick forests, and the birds shot by us were feeding on berries.

The wonderful colouring of the soft parts was given by me in the 'Ibis' for 1897, p. 242.

[To be continued.]

XV.—*Ushant as an Ornithological Station.—Notes on the Birds observed at Ushant, at Le Conquet on the west coast of Brittany, and at Alderney.* By William Eagle Clarke, F.L.S.

When studying the map of Western Europe in connection with the geographical aspect of bird-migration, I became impressed with the importance of the Island of Ushant as an ornithological station. Ushant appeared to me to lie not only at the diverging point where all those migrants which traverse the southern (French) shores of the Channel and the western coast of France change their course to proceed east or south, according to the season, but also to lie in the course of those birds of passage which, having skirted the western and southern coast-lines of Britain, take their departure from our south-western shores and wing their way southward to their winter-quarters, reversing this route in the spring.

Thus it is an islet situated amid the two main streams of that vast tide of migrants which flows northward in the spring, and ebbs southward in the autumn, along the shores of Western Europe.

Nothing, however, appeared to be known concerning the island ornithologically.

It was a belief in this theory of the importance of Ushant as a station for ornithological observations that led the writer to make an application to the Royal Society for an allotment from the Government Grant, to enable him to visit Ushant for the purpose of making investigations regarding the migration of birds—an application which was fortunately successful.

The following is an account and detailed record of the results obtained by this little expedition, on which I had the advantage of the companionship and co-operation of my friend Mr. T. G. Laidlaw, of Edinburgh.

It had been our intention to devote several weeks to making observations on Ushant, but, as the sequel will show, a remarkable and unexpected experience awaited us, and compelled us reluctantly to modify our plans, with the result that the island of Alderney came within the scope of our peregrinations.

We arrived at the little port of Le Conquet, the place of embarkation for Ushant, situated some twelve miles west of Brest, on the night of the 7th of September last. Early the following morning found us on board the steamer 'Louise,' a small craft which conveys the mails to the Islands of Molène and Ushant: isles which are chiefly associated, in the public mind, with the loss of that ill-fated liner the 'Drummond Castle,' in 1896. The morning, however, was unpropitious, inasmuch as a dense sea-fog prevailed, and at mid-day the passage was abandoned until the morrow.

Fortunately at Le Conquet there is an estuary, formed of the embouchures of several small rivers. Here at low water there are extensive mud-flats, while several small moist islands are then accessible from the shore. On these attractive feeding-grounds we observed, in the few hours available, Turnstones, Dunlins, Curlew-Sandpipers, Knots, Redshanks, Greenshanks, Common Sandpipers, Ruffs and Reeves, Whimbrels, Curlews, &c. The occurrence of the Knot, Curlew-Sandpiper, &c., as birds of passage, was interesting, but not unexpected, since the western shores of France naturally lie in the direct course of their migrations. In addition, a number of other species of minor interest came under our notice; and since the avifauna of Brittany has not received the attention it deserves, these species will be dealt with in the systematic and concluding section of this contribution.

We were under way at 6 o'clock on the morning of the 9th, and were soon threading our course through those rock-studded and dangerous seas which lie between the mainland and our island goal. A glance at the chart of these waters shows that there extends from the mouth of the Gulf of Brest, in a north-westerly direction, a series of islands and innumerable islets, rocks, and reefs—many of the latter being just awash or partially submerged. This archipelago culminates in the comparatively large island of Ouessant, which we call Ushant. Through the numerous straits, channels, and rocky labyrinths with which the group abounds, a tide rushes at the rate of fourteen knots an hour, rendering the surface of the sea for many square miles a series of races, boils, and swirls, resembling the waters of a mighty torrent rather than those of the ocean. Add to this the remarkably rugged outlines of the stacks and many of the islets, and the quaintness that enshrouds the little out-of-the-world community that dwells upon the island of

Molène, and we have before us scenes which it would be difficult to match elsewhere in European waters.

The birds seen on the voyage were Manx Shearwaters, Cormorants, Shags, Herring-Gulls, Lesser and Greater Black-backed Gulls, Sandwich and Lesser Terns; and among migrants a Common Sandpiper and an Osprey.

A three hours' run brought us to Ushant, the most westerly land of France, and situated twelve miles from the nearest point of the mainland. This island is irregular in outline, for it throws out, as it were, two long parallel arms to the south-west, which enclose the deep Baie de Porspaul; while there are minor promontories to the north-east, north, and north-west. It is about three and a half square miles in area, and does not present any remarkable physical features excepting the wonderful rock-scenery on the west coast, of which more anon. Cliffs face the sea on all sides except the south-west, and these attain their maximum height of 211 feet in the north. The surface of the island has a parched and arid appearance, due to its herbage being closely cropped by the cattle and sheep of the inhabitants. There are, however, several shallow, moist, verdant depressions, down which, no doubt, tiny streams may find their way to the sea during the winter rains. Some corn is grown, and whins flourish in compounds erected for their protection, for these shrubs form an important item of fuel. There are a few trees, of small size, in one or two of the gardens at Lampaul, the chief settlement, at the head of the Baie de Porspaul.

Geologically, the island is composed of foliated granite. This rock in weathering does not form ledges, and this, in a measure, may account for the absence of breeding-stations of sea-fowl on the sheltered eastern cliffs; those on the north and west are wave-swept even in summer, and are consequently not available.

The west coast is exposed to the full force of the Atlantic, and by the fury of its waves the numerous stacks and the irregular face of its lower cliffs have been carved and transformed into all manner of remarkable and fantastic forms.

Indeed, the rock-scenery on the west coast is wild and romantic in the extreme.

Off and close to Ushant lie many hundreds of islets and rocks, only a few of which are of considerable size, but none of them appear to be tenanted during the breeding-season by Gulls, Terns, or other marine species. On the large island of Balanec, which lies some five miles S.E. of Ushant, many "Hirondelles de mer," "Perroquets de mer," "Goëlands," &c. rear their young—at least so we were informed, though we certainly never saw a Puffin in the region.

The island has the surprisingly large population of over two thousand inhabitants. All the men are engaged in the lobster-fishery and appeared to be well-to-do; for a rich and practically inexhaustible harvest of these crustaceans lies among the vast submerged reefs and the rocky sea-bottom, which extend for miles around Ushant.

There are two lighthouses on the island, namely the Phare du Stif in the north-east, and the Phare de Creach in the south-west. The latter has long been lighted with electricity, and throws out powerful and rapidly revolving beams which can be seen many miles off.

At Ushant we had hoped to remain for several weeks, but we had barely been six days on the island when an immigrant in blue and white arrived: to wit, a sergeant of gendarmes (there are no police on the island). He incessantly dogged our footsteps at close quarters during our rambles, while our place of abode was under his surveillance early and late; and although we were not disposed at first to take any notice of his presence, the espionage at length became so intolerable that we reported the matter to the British Consul at Brest, and requested him to protest to the French authorities against the vexatious treatment to which we were being subjected. This the Consul most obligingly did, but his efforts were unavailing, for the authorities informed the Consul that the gendarme had been sent to watch us by instructions from Paris.

By the advice of the Consul, in order to escape from more serious unpleasantness, we quitted the island on the 17th of September and returned to Brest. Thus was our Ushant expedition wrecked.

It may be well to state here that our Foreign Office had informed the French Government of our intended visit to Ushant, and its object, long before our advent on the island. Thus the treatment meted out to us is inexplicable *.

During our short sojourn on the island we observed a number of birds. On these I shall now proceed to make a few remarks, reserving for the concluding annotated list the detailed particulars.

The following were doubtless resident species on Ushant:—Raven, Sparrow, Linnet, Corn-Bunting, Yellow Bunting, Sky-Lark, Meadow-Pipit, Rock-Pipit, Stonechat, Redbreast, Hedge-Accentor, Wren, Peregrine Falcon, Ringed Plover, and, perhaps, the Oyster-catcher.

The summer visitors appeared to be only two in number—the Whitethroat and the Swallow.

The birds of passage observed between the 9th and 17th of September—a period of phenomenally fine weather, be it remarked—were the Redwing, Wheatear, Whinchat, White Wagtail, Grey Wagtail, Yellow Wagtail, Hen-Harrier, Sparrow-Hawk, Kestrel, Osprey, Heron, Turtle-Dove, Dotterel, Lapwing, Turnstone, Sanderling, Common Sandpiper, Redshank, Whimbrel, Curlew, Arctic, Common, Lesser, and Sandwich Terns, and Manx and Great Shearwaters. The absence of suitable shores on which to feed and rest accounts, no doubt, for the absence of several of the species

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* Perhaps the following extract from 'La Patrie' may throw some light upon the occurrence. Writing in October last, this paper states, on the authority of its Brest correspondent, that "the English are in the habit of visiting Ushant with a view to secure pilots well acquainted with these dangerous seas, and to bribe the islanders with British gold. Only last year, under the pretence of rewarding the islanders for their conduct in connection with the wreck of the 'Drummond Castle,' they scattered a perfect golden shower over the islands. In short, our neighbours, in the time of peace, pave the way for the purchase of traitors in the time of war" (*vide* 'Standard,' Oct. 23, 1898). This, we were credibly informed at Brest, was the true explanation of the situation.

of Wading-birds which we had observed on the mud-flats of the opposite coast at Le Conquet. The brilliant weather, too, was decidedly against any migratory movement, pronounced or otherwise. Some of the species were, however, observed in considerable numbers.

The following species noted may perhaps be best described as winter visitors to the island, though the nesting-grounds of some of them are probably not far distant. These were the Kingfisher, Cormorant, Shag, Common Gull, Herring-Gull, Lesser and Greater Black-backed Gulls, and Kittiwake. Certain of the species observed as birds of passage—the Turnstone, for instance—are also winter residents.

I took with me to Ushant a carefully-prepared series of questions relating to the birds and their migrations as observed on the island, copies of which I left with the "Gardien Chef" of each lighthouse, with a request for answers and such other information bearing upon the subject as they could afford me. These documents I had to abandon on quitting the island. But on mentioning the fact to Mr. Consul Hoare, at Brest, he most kindly offered to see the authorities at the Ponts et Chaussées, under whose jurisdiction the lighthouses fall, and endeavour to procure for me the information I desired. As the result, I have received excellent and most useful answers to my enquiries from each of the Ushant lighthouses.

From these we learn that the island is visited annually by vast numbers of birds of passage, and that on dark, moonless, and starless nights, with easterly winds, during the autumnal migratory period, from 500 to 600 birds are killed at the lantern—among others, Chaffinches, Thrushes, Blackbirds, Wild Ducks, Waterhens, Plovers, Lapwings, Woodcocks, Snipes, and Curlews. As an illustration of the phenomenal numbers which sometimes occur, the Chef of the Phare de Creach informs me that on one night in the autumn of 1888 no fewer than 1500 birds perished by striking the lantern —an extraordinary number, truly ; but its accuracy is confirmed and vouched for by the engineer to the lighthouse authorities, to whom the Consul obligingly referred, at my request.

These reports tell us that the greatest number of migrants appear in October. The following species are mentioned as occurring annually, excluding those in the list of birds of passage already given as coming under the notice of Mr. Laidlaw and myself:—Black and Grey Crows, Starlings, Chaffinches, Goldfinches, Siskins, Bullfinches, Buntings, Goldcrests, Warblers, Thrushes of various species, Martins, Cuckoos, Owls, Falcons, Herons, Wild Geese, Wild Duck, Teal, Ring-Doves, Quails, Land-Rails, Water-Rails, Waterhens, Golden Plover, Grey Plover, Woodcocks, Snipe, Sandpipers, and Gulls of various kind. In addition to these, M. Lucas, the Chef of the Phare du Stif, very pertinently remarks that "L'île est encore visitée par d'autres espèces d'oiseaux, particulièrement de l'ordre des Passereaux, mais dont les noms me sont inconnus."

It is towards the end of autumn that "les grandes volées" occur.

Both of these observers agree that here, as elsewhere, fewer migrants are observed in the spring, though the same species appear at that season.

In winters of great cold, and when the Continent is under snow, immense numbers of Starlings, Chaffinches, Thrushes, Blackbirds, Wild Geese, Wild Ducks, Teal, Quails, Water-Rails, Waterhens, Plovers, Lapwings, Snipe, and Woodcock, accompanied by Hawks of various species, seek the milder climate of the island, and usually remain until the end of February.

In mild, moist, rainy winters very few birds indeed visit the island.

According to the same authorities, the following birds nest annually on Ushant:—Ravens, Sparrows, Linnets, Larks, Pipits, Redbreasts, Warblers [Whitethroats], Wrens, and Swallows.

I beg to tender my thanks to these obliging and painstaking observers for their excellent and valuable reports, which do them infinite credit.

There can be no doubt that had we been permitted to remain in peace upon the island until the early days of October, as we intended, we should have obtained some interesting details regarding the species and their movements. Enough, however, thanks chiefly to the lighthouse-keepers, has been demonstrated to prove that Ushant is a station of first-rate importance as an observatory for witnessing the movements of migratory birds ; and thus the primary object of our visit has been accomplished.

The Consul strongly advised us to quit France, lest further annoyance should be experienced elsewhere, and we decided to proceed to the Channel Islands, selecting Alderney as being the most favourably situated for our investigations.

It should be remarked that Alderney is singularly destitute of trees, and therefore many of our usual resident and summer birds are absent, while others are uncommon, though some of them may, and do, occur as birds of passage. Here, between the 22nd and 29th of September, we witnessed two decided movements, namely on the 25th and 26th ; when, among other species, the Missel-Thrush, Ring-Ouzel, Goldcrest, Chiffchaff, Willow-Wren, Spotted Flycatcher, Pied Flycatcher, Turtle-Doves, Water-Rail, and Common Snipe appeared as immigrants.

Some of our notes relating to the birds observed on the island are at variance with the experience of the late Mr. Cecil Smith, the author of that useful little book 'The Birds of Guernsey, and neighbouring Islands of Alderney, &c.,' published in 1879. Such critical remarks as I have to offer are reserved for the list, where they will be found under the respective species to which they relate.

I cannot close this contribution without acknowledging, on behalf of Mr. Laidlaw and myself, our indebtedness to Mr. Hoare the Consul and Mr. Bonar the Vice-Consul. These gentlemen both before, during, and after our visit to Ushant, rendered us much assistance ; and it is our pleasure as well as our duty to express our grateful appreciation of their courtesy and of the value of the services rendered.

The following is an annotated list of all the species which came under the notice of Mr. Laidlaw and myself at Ushant, as well as at Le Conquet on the west coast of Brittany, and also at Alderney.

1. CORVUS CORAX.

Ushant. The cliffs of Ushant afford a home and nesting-place for a pair of Ravens, whose presence was well-known to the natives. These birds were seen daily in company; but their young had, no doubt, been long since banished from the isle of their birth.

Sark. Three Ravens were seen and heard under the east cliffs on the 29th of September. Mr. Smith, writing in 1879, regards this bird as an occasional straggler and a non-breeding bird on any of the Channel Islands. We have little doubt that the birds observed were natives.

2. CORVUS CORONE.

Le Conquet. Several Carrion-Crows were observed on September 8th.

Alderney. A very common resident species.

3. CORVUS FRUGILEGUS.

Le Conquet. Several Rooks were seen on the 8th of September.

4. CORVUS MONEDULA.

Le Conquet. Several Jackdaws were observed.

Alderney. Very common.

5. PICA RUSTICA.

Le Conquet. Common.

6. GARRULUS GLANDARIUS.

Le Conquet. Common.

7. STURNUS VULGARIS.

Ushant. The lighthouse-keepers inform me that this is an extremely abundant bird of passage, and that it is also common as a winter visitor, especially during severe weather.

At the commencement of the third week of September the Starling had not yet arrived at Ushant; but we picked up a pair of withered wings of an unfortunate of the previous season.

Alderney. Not uncommon.

8. Ligurinus chloris.

Alderney. Common.

9. Passer domesticus.

Ushant. A very common resident.

Le Conquet and Alderney. Common and resident.

10. Fringilla cœlebs.

Le Conquet. Observed.

Alderney. The Chaffinch appears to be a decidedly uncommon species on the island: a fact which is probably due to the great scarcity of trees.

11. Linota cannabina.

Ushant. To the Linnet, Ushant offers considerable attractions in its numerous and enclosed furze-coverts, and the bird is consequently a common resident. It was particularly abundant during our stay, when the ranks of the home birds were probably recruited by immigrants.

Le Conquet and Alderney. Common.

12. Emberiza miliaria.

Ushant. The Corn-Bunting is common and resident on the island. It frequents the enclosures and the cultivated patches.

We failed to detect this bird in Alderney.

13. Emberiza citrinella.

Ushant. The Yellow Bunting is also a common and resident species.

Alderney. Common.

14. Alauda arvensis.

Ushant. Though most abundant during the autumn passage, the Sky-Lark is also fairly common as a resident species. Great numbers are said to visit the islands during severe winters and when the mainland is under snow.

Alderney. Common.

15. MOTACILLA ALBA.

Ushant. The White Wagtail was numerous as a bird of passage during our sojourn on the island. It was to be seen in parties of from 20 to 30; and on some occasions we saw as many as 200 during our rambles. There were probably several hundreds on the island on certain days during our visit.

Le Conquet. Several were seen on September 8th.

16. MOTACILLA LUGUBRIS.

Alderney. The Pied Wagtail was quite common, and observed, either singly or in family parties, between September 22nd and 28th.

Mr. Cecil Smith does not mention this species for Alderney, but remarks on its scarcity in Guernsey.

17. MOTACILLA MELANOPE.

Ushant. The Grey Wagtail was far from common on the island; but several were observed on passage on the 10th and 11th of September and carefully identified.

Alderney. Not uncommon. This Wagtail is not mentioned for Alderney by Mr. Cecil Smith (*op. cit.* p. 64).

18. MOTACILLA RAII.

Ushant. The Yellow Wagtail was very common on passage during the time we were on the island—September 9th–16th. The birds observed were chiefly young of the year, but many fine old males were conspicuous among the bands of migrants of this species.

Le Conquet. A large flock observed on September 8th.

Alderney. Very numerous as a bird of passage during our stay—September 22nd–28th. Mr. Cecil Smith (*op. cit.* p. 65) describes this bird as being only an occasional visitant on migration. This may be true for the other islands, but it certainly is not the case in Alderney, for which island, by the way, he does not mention this species.

19. ANTHUS PRATENSIS.

Ushant. The Meadow-Pipit was a very common bird on the island. It is a resident (or breeding) species, but is most abundant as a bird of passage.

Alderney. Very common during our stay.

20. ANTHUS OBSCURUS.

Ushant. The Rock-Pipit was very numerous, and is, perhaps, a resident species in the congenial haunts afforded by the island.

Le Conquet. Common on the coast on September 8th.

Alderney. Very abundant.

21. PARUS CÆRULEUS.

Le Conquet. September 8th. Several Blue Tits seen.

Alderney. Only once observed—namely, a single bird on the 27th of September. Mr. Cecil Smith is quite right in describing this bird as by no means numerous in the Channel Islands.

22. REGULUS CRISTATUS.

Alderney. There were arrivals of Goldcrests on the nights of the 25th and 26th of September, and many were seen in the hedgerows on the following days.

Mr. Cecil Smith (*op. cit.* p. 54) doubts whether the numbers of this bird are regularly increased in the autumn by migrants in the Channel Islands. There are, however, no suitable haunts for this bird in Alderney, and it was not seen until after the immigration, which occurred on the night of the 25th of September.

23. PHYLLOSCOPUS RUFUS.

Le Conquet. The notes of the Chiffchaff were heard in a garden on the 8th of September.

Alderney. Several were observed and heard among the other immigrants which put in an appearance on the 25th and 26th of September.

Mr. Cecil Smith has no information regarding this bird in Alderney, where it is only a bird of passage, owing to a lack of suitable breeding-haunts.

24. Phylloscopus trochilus.

Le Conquet. Several Willow-Warblers were noted in the vicinity on September 8th.

Alderney. Many observed on the 25th, 26th, and 27th of September, having arrived with other immigrants on the nights of the two first-named dates.

This bird is not mentioned by Mr. Cecil Smith for Alderney.

25. Sylvia cinerea.

Ushant. Several Whitethroats were seen; and the species is undoubtedly a summer visitor, as well as a bird of passage, on the island.

Le Conquet. Several were seen on the 8th of September.

Alderney. Was still common up to the 28th of September.

26. Turdus viscivorus.

Alderney. A few Missel-Thrushes on passage were seen in the hedgerows, in company with a number of immigrant species, on the 25th and 26th of September.

27. Turdus musicus.

Le Conquet. Several Song-Thrushes were observed in the wooded districts on the 8th of September.

Alderney. Many were noted on the 25th and 26th of September, having arrived on the island during the previous nights.

28. Turdus iliacus.

Ushant. Four Redwings were seen, and their notes heard, in the north of the island on the 10th of September. This date is decidedly an early one on which to find this bird so far to the south. Many Redwings, however, depart from Iceland during the early days of this month.

29. Turdus merula.

Alderney. On the 25th and 26th of September many immigrant Blackbirds, chiefly birds of the year, were observed, having arrived during the previous night.

30. Turdus torquatus.

A single Ring-Ouzel was seen on the 22nd of September.

On the 26th several were observed in the hedgerows along with other immigrants, having arrived overnight. These birds were again noted on the 27th.

31. ERITHACUS RUBECULA.

Ushant. The Redbreast is fairly common and resident in the island. It was chiefly observed in the neighbourhood of houses, but by no means confined thereto.

Le Conquet. Several, September 8th.

Alderney. Common.

32. SAXICOLA ŒNANTHE.

Ushant. The Wheatear was very abundant as a bird of passage during our sojourn on the island—Sept. 9th to 17th. A few males were seen showing traces of the summer dress, but the great majority of the birds seen were in the plumage of the female.

Le Conquet. Sept. 8th. Several on the coast.

Alderney. Sept. 22nd to 28th. Still common.

33. PRATINCOLA RUBETRA.

Ushant. A young male Whinchat appeared on the 11th of September, and was the only bird of this species that came under our notice on the island.

Alderney. Single birds were observed on the 22nd and 27th of September.

34. PRATINCOLA RUBICOLA.

Ushant. The Stonechat was surprisingly abundant; indeed we have never seen this species elsewhere in anything like the numbers. There must have been at least a couple of hundred of them on this small island.

It is doubtless a resident species, finding congenial haunts in the numerous compounds in which whin is cultivated.

Le Conquet. Several seen on the 8th of September.

Alderney. Very common, September 22nd to 28th.

35. ACCENTOR MODULARIS.

Ushant. The Hedge-Accentor is a common resident, frequenting the whin-enclosures and the neighbourhood of the houses.

Le Conquet. Several observed on September 8th.

Alderney. Common.

36. Troglodytes parvulus.

Ushant. The Wren was a common bird among the whin-enclosures, and is probably a resident on the island.

Le Conquet. Was observed on September 8th.

Alderney. Common.

37. Muscicapa grisola.

Alderney. The Spotted Flycatcher was numerous in the hedgerows on the 25th and 26th of September, along with various immigrants, of which it was undoubtedly one.

Mr. Cecil Smith (*op. cit.* p. 24) says that this bird probably occurs in Alderney.

38. Muscicapa atricapilla.

Alderney. A Pied Flycatcher was distinctly seen by Mr. Laidlaw and myself, independently, on the morning of the 27th of September. It was in a tall hedge, with Ring-Ouzels, Blackbirds, Goldcrests, Willow-Wrens, and other migrants, and was in "female" plumage.

This species has no place in Mr. Cecil Smith's book, and I am unable to state whether it is new to Alderney and other of the Channel Islands.

39. Hirundo rustica.

Ushant. The Swallow is a summer visitor, in limited numbers, to the island, and had not departed at the date of our exit.

Le Conquet and Alderney. Was observed commonly.

40. Chelidon urbica.

Le Conquet and Alderney. The Martin was observed at both places, but did not appear to be an abundant species at Alderney at the time of our visit.

41. Cotile riparia.

Le Conquet. The Sand-Martin was observed on September 8th.

Alderney. Not uncommon during the last week of September. Mr. Cecil Smith (*op. cit.* p. 108) regards this species as a spring visitor, not remaining to breed.

42. GECINUS VIRIDIS.

Le Conquet. Common.

43. ALCEDO ISPIDA.

Ushant. The Kingfisher was surprisingly abundant all round the rocky coasts of the island, and appeared to be quite at home at the base of the highest cliffs, or on the margins of the surf-washed creeks on the rugged western shore. No doubt the extraordinary abundance of fish and the crystal clearness of the sea were the attractions which had induced more than *fifty* of these birds to seek out these singular haunts. The great majority of the birds noted were adults, and were chiefly, almost always, observed in pairs. The conclusions to be drawn from these facts might lead one to consider that the Kingfisher was a resident species, breeding in more or less suitable places in the cliffs. This surely cannot be the case? It seems more probable that the bird is an autumn and winter visitor to Ushant.

Le Conquet and Alderney. Not uncommon on the coast

44. CIRCUS CYANEUS.

Ushant. From September 9th to 14th we saw a "ring-tailed" Hen-Harrier daily. It chiefly frequented the cliffs, from which it occasionally made foraging excursions inland.

Le Conquet. On the 8th of September we saw a Harrier, also a female, cross the estuary at Le Conquet, when it caused much concern among the Carrion-Crows and Jackdaws.

45. ACCIPITER NISUS.

Ushant. Single migratory Sparrow-Hawks were observed on several occasions between the 10th and 16th of September.

46. FALCO PEREGRINUS.

Ushant. A pair of Peregrine Falcons is resident on the cliffs of the island, and the birds were observed by us almost daily.

Alderney. On September 20th one was noted on the south cliff.

47. Falco æsalon.

Alderney. A Merlin was seen at the west end of the island on September 23rd, doubtless a migrant.

48. Falco tinnunculus.

Ushant. Migratory Kestrels were not uncommon, and several were seen daily during our stay on the island—September 9th–17th.

Le Conquet. Observed.

Alderney. Extremely abundant during the last weeks in September. Eight or nine were seen on the wing simultaneously, and a considerable number—a score or two—must have been present on several days. These birds were undoubtedly migrants, and were probably attracted by the abundance of a coleopteron rejoicing in the name of the "bloody-nosed beetle" (*Timarcha* sp.). The late Mr. Smith doubted whether the numbers of this bird were at all increased during the migratory season in the Channel Islands. His remark certainly does not apply to Alderney, where we saw a score of different individuals in a few minutes on several occasions.

49. Pandion haliaëtus.

Ushant. On September the 9th an Osprey was observed quite close to our steamer, on leaving the island of Molène for Ushant.

50. Phalacrocorax carbo.

Ushant. The Cormorant was very abundant at the period of our visit. It is probably a winter visitor to Ushant and the adjacent islands, arriving early in the autumn.

Le Conquet. Common.

Alderney. Very abundant. Mr. Cecil Smith regarded this species as uncommon in the Channel Islands, being replaced there by the Shag: a species which did not come under our notice on Alderney.

51. Phalacrocorax graculus.

Ushant. Though the Shag was a common bird on the rocks around Ushant, yet it was not nearly so numerous as its congener the Cormorant. Like the latter bird, it is doubtless an autumn and winter visitor to the archipelago.

Le Conquet. The same remarks apply to Le Conquet and neighbouring coast.

52. Ardea cinerea.

Ushant. Single examples of the Heron were observed on the 12th and 13th of September. This bird is probably only an occasional visitor to the island, since there are few suitable shallows in which to capture prey.

53. Columba palumbus.

Le Conquet. The Ring-Dove was observed in some numbers in the woods in the immediate neighbourhood.

54. Columba livia.

Alderney. One was seen in company with some Jackdaws on the south cliffs on the 24th of September.

Mr. Cecil Smith never observed the Rock-Dove on any of the islands, though he was of opinion that a few might yet remain in Alderney.

55. Turtur communis.

Ushant. Single migratory Turtle-Doves were observed on the east side of the island on the 10th and 13th of September.

Alderney. A pair noted on the 22nd, and a single bird on the 25th of September, were undoubtedly birds of passage.

56. Perdix cinerea.

Le Conquet. A covey of Partridges were seen near Le Conquet on the 8th of September.

57. Rallus aquaticus.

Alderney. I twice put a Water-Rail out of a ditch on the 26th of September. There is an absence of suitable haunts for this bird on the island, and there can be little doubt that it was a recent arrival.

Mr. C. Smith makes no mention of this species for Alderney.

58. Crex pratensis.

Alderney. One Land-Rail was seen on the south coast on the 23rd of September, and another on the 26th.

59. Charadrius pluvialis.

Alderney. Two Golden Plovers were seen on the 23rd of September, several on the 26th, and five were resting on the sands at Longey Bay on the 27th. It is a bird of passage and winter visitor to the islands.

60. Eudromias morinellus.

Ushant. Single examples of the Dotterel were observed on the western side of the island on the 14th and 15th of September; possibly the same bird was seen on each occasion. When first noted it was on the wing; on the second it allowed a close approach while resting, and flew off uttering its unmusical note.

61. Ægialitis hiaticola.

Ushant. The Ringed Plover was quite a common and doubtless a resident species on the island—finding on the arid tracts a suitable breeding-ground, in the almost entire absence of littoral haunts.

Le Conquet and Alderney. Common.

62. Vanellus vulgaris.

Ushant. Five Lapwings arrived at Ushant on the night of the 9th of September and remained during our visit. This species is mentioned by the light-keepers as being very common, both as a bird of passage and as a winter visitor to the island.

63. Strepsilas interpres.

Ushant. The Turnstone finds many congenial haunts along the rock-bound shores of Ushant, and was quite common during our stay. It was often seen feeding inland along with Ringed Plovers and a few Sanderlings, being attracted by the coleoptera which abounded on the island.

Le Conquet. Common on the margins of the estuary and on the coast.

Alderney. Fairly common.

64. HÆMATOPUS OSTRALEGUS.

Ushant. Common as an autumn migrant and winter visitor; and possibly also breeds, along with the Ringed Plover, on the arid stony tract adjoining the shore on the west side of the island.

Le Conquet and Alderney. Common.

65. GALLINAGO CŒLESTIS.

Alderney. A single Snipe was observed on the 25th of September. This bird is a winter visitor to the islands, but Alderney offers few, if any, attractions to this and other paludal species.

66. TRINGA ALPINA.

Le Conquet. The Dunlin was very abundant on the estuary on the 8th of September. It is, no doubt, a bird of double passage and also a winter visitor there.

Alderney. Two were seen on the sands of Longey Bay on the 27th of September.

67. TRINGA SUBARQUATA.

Le Conquet. The Curlew-Sandpiper was quite an abundant species on the margins and moist islands of the estuary on the 8th of September. This species is a bird of passage on the west coast of Brittany.

68. TRINGA CANUTUS.

Le Conquet. The Knot was also numerous on the shores of the moist islands of the estuary on the 8th of September. It is doubtless both a bird of passage and a winter visitor.

69. MACHETES PUGNAX.

Le Conquet. Several Ruffs and Reeves were feeding on the shores of the estuary on the 8th of September.

70. CALIDRIS ARENARIA.

Ushant. A few Sanderlings were observed during our stay. These were in small parties of two, three, or four individuals, consorting with the Ringed Plovers and Turnstones, and along with them seeking their food on the barren, stony land immediately adjoining the shore, on which a small species of beetle was numerous.

71. TOTANUS HYPOLEUCUS.

Ushant. The Common Sandpiper was extremely abundant as a bird of passage throughout our visit. It frequented chiefly the edge of the water, and was as numerous at the foot of the highest cliffs as elsewhere. On the 10th of September we computed that no less than 60 of these birds came under our notice. One was seen at sea between Le Conquet and Molène on the 9th of September.

Le Conquet. Common on the estuary and on the coast on September 8th.

Alderney. A few seen daily on the coast up to the 28th of September, the day of our departure.

72. TOTANUS CALIDRIS.

Ushant. The island offered few inducements to the Redshank, and hence one or two, seen singly, were all that visited the island during our sojourn.

Le Conquet. September 8th. Fairly common on the estuary.

73. TOTANUS CANESCENS.

Le Conquet. The Greenshank was not at all uncommon on the streams at the head of the estuary, where it was engaged wading in the shallows in search of food (September 8th).

74. NUMENIUS PHÆOPUS.

Ushant. This bird was seen daily on passage on all the coasts of the island, and was quite an abundant species.

Le Conquet. The Whimbrel was common on the muds on September 8th.

75. NUMENIUS ARQUATA.

Ushant. The Curlew was one of the most numerously represented species observed. It was to be seen daily in parties, sometimes 100 strong, feeding on the parched land, where small beetles were very numerous at the time. The presence of these insects induced, no doubt, these birds to tarry on the island in such numbers.

Le Conquet. Common on the muds.

Alderney. Not an abundant species.

76. STERNA MACRURA.

Ushant. Terns were abundant off the island during our visit; but it was not until the 14th of September that we identified *Sterna macrura.* On that day we watched a number of Arctic Terns as they rested on a rock just off the south coast of the island. Among these we detected no fewer than ten individuals in that stage of adolescent plumage which led Mr. Ridgway to describe this bird as a distinct species under the name of *Sterna portlandica.* There was no doubt as to their identity, for, as if to oblige us, some of them continually left the rock to alight on the shore just at our feet. We may, I think, fairly assume from this that there were many more of these interesting birds around Ushant and the neighbouring islands.

77. STERNA FLUVIATILIS.

Ushant. Very common. Many old birds were still observed engaged in feeding their young, while the latter rested on the rocks off the coast—a fact which indicates that there is a breeding-station of this species near at hand, perhaps on the Isle of Balanec, north of Molène, where we were informed that the "Hirondelle de mer" bred in some numbers.

78. STERNA MINUTA.

Ushant. The Little Tern was observed off Molène on the 9th of September, and was not uncommon off Ushant during our visit.

79. STERNA CANTIACA.

Ushant. Not uncommon throughout our stay, and also observed off Molène.

Le Conquet. A few Sandwich Terns were seen off the coast on the 8th and 9th of September.

80. LARUS RIDIBUNDUS.

Le Conquet. Not uncommon on the estuary on September 8th, but not observed at or off Ushant.

81. LARUS CANUS.

Ushant. Not uncommon on the coast and on the outlying rocks, to which the Common Gull is an autumn and winter visitor.

82. LARUS ARGENTATUS.

Ushant. Common off the coast and also at Molène. The Herring-Gull is an autumn and winter visitor to Ushant.

Alderney. Common.

83. LARUS FUSCUS.

Ushant. The Lesser Black-backed Gull was quite common on the coast, and was also observed at Molène.

Le Conquet. Common.

Alderney. A few only observed.

84. LARUS MARINUS.

Ushant. Fairly common off the island and at Molène.

Alderney. The Great Black-backed Gull was not uncommon at sea around the island.

85. RISSA TRIDACTYLA.

Ushant. Young and old Kittiwakes were not uncommon on the stacks and rocks after the 14th of September, on which day they made their appearance off the island, along with the Arctic Tern.

Alderney. A number seen off the island on the 28th of September.

86. PUFFINUS ANGLORUM.

Ushant. This Shearwater was very abundant on the 9th and 17th of September, when we were *en route* for, and returning from, Ushant. It was chiefly observed when some little distance from land.

This bird was very numerous off the Casquets on the 30th of September. Mr. Cecil Smith tells us that it is an occasional wanderer to the Channel Islands.

87. Puffinus gravis O'Reilly.

Ushant. When just off Ushant and Le Conquet, and *en route* for Molène on September 17th, six Great Shearwaters were seen, either singly or in pairs, fairly close to the steamer. Off the Casquets, on September 30th, one was seen along with the Manx Shearwaters.

XVI.—*On new Species of Birds obtained in Kan-su by M. Berezovsky.* By H. E. Dresser and E. Delmar Morgan.

In 1884 Mr. M. Berezovsky went as ornithologist on the expedition led by Mr. G. N. Potanin to explore North-west China, and when the expedition returned, thanks to the generosity of Mr. W. P. Sukatscheff, he was able to continue his explorations for another year. The result of his scientific labours has been embodied in a work by Messrs. Berezovsky and Bianchi, in Russian, entitled 'Ptitzi Kansuskago Puteshestviya G. N. Potanina' (St. Petersburg, 1891), or 'The Birds of the Potanin Expedition through the Province of Kan-su and the adjacent Country.' In this work six new species of birds are described, but the descriptions, being in Russian only, are unavailable to most Western ornithologists. Consequently, at my suggestion, Mr. E. Delmar Morgan has kindly translated these descriptions, and forwarded his translation to me to revise for the press. It proved, however, to be too long for publication in that form in 'The Ibis,' and I have therefore undertaken to condense it and bring it into such shape as to enable the Editors of this Journal to accept it. Fortunately, of these six species there are co-types of two (*Trochalopterum sukatschewi* and *Pœcile davidi*) in the Tring Museum, which have been placed at my disposal by the Hon. Walter Rothschild for examination and description. The descriptions of the other four species are translated from the Russian.—H. E. D.

TROCHALOPTERUM SUKATSCHEWI (*op. cit.* p. 59, pl. i. fig. 1).

♂ *ad.* Upper parts browner and darker than in *T. ellioti*, the rump rufous, the inner secondaries with conspicuous white patches on the terminal portions of the inner web, the outer primaries slate-blue on the outer web, and not golden yellow as in *T. ellioti*; tail as in that species, but without any golden yellow on any of the rectrices; a narrow line across the base of the upper mandible, lores and a broad line surrounding a large white patch below the eye deep black; underparts as in *T. ellioti*, but washed with vinous, and the lower abdomen and under tail-coverts pale rufous-orange. Tail much rounded, the outermost feathers fully 2·0 mm. shorter than the central ones. Culmen 0·9 mm., wing 4·1, tail 5·85, tarsus 1·55. Iris dark cinnamon; legs pale rose-grey; bill dark horn, yellowish green at the base.

Specimens were obtained at the village of Satani in October, November, and December, the village of Chago in November and December, and the village of Yo-dzam-pu in July. The measurements of these specimens vary as follows:—♂. Total length 2·80–3·10 mm., extent 312–320, wing 99–108, bill 23–28, tarsus 37–39, hind toe with claw 19·5–22, tail 143–160. ♀. Total length 270–293 mm., extent 305–320, wing 97–106, bill 22–26, tarsus 38–39, hind toe with claw 20–21, tail 132–158.

Mr. Berezovsky met with this species in the districts of Si-gu-chen and Ming-djau. It is a rare bird, inhabiting the more elevated portions of the mountains, where conifer-woods abound, especially where there is an undergrowth of bamboo. It was in pairs both winter and summer. It frequents thickets and is always to be met with on the ground, where it digs in the moss and dry leaves in search of food. It roosts on trees, and at sunset the pair call to each other with a loud note.

SUTHORA PRZEWALSKII (*op. cit.* p. 67, pl. ii. fig. 1).

Sexes alike. Crown and nape ash-grey; nasal feathers, lores, and forehead cinnamon-black; from the forehead over the eye and along the upper edge of the ear-coverts a cinnamon-black band passes, which becomes broader and darker towards the nape; upper part of the back olivaceous grey; lower back, scapulars, rump, and upper tail-coverts dull olive, brighter on the scapulars and rump; region round the eye, edge of gape, chin, throat, and upper breast cinnamon, rather brighter on the centre of the breast and paler below; sides of the neck and breast grey, tinged with cinnamon; flanks, abdomen, crissum, and under tail-coverts dull coloured, brighter on the lower portion; all the upper wing-coverts and the quills dull coloured, with an olivaceous tinge, the inner webs of the median wing-coverts blackish; outer webs of the quills dull coloured, the base of the primaries with a reddish tinge; the inner webs of the primaries and secondaries greyish black, of the tertiaries olivaceous blackish brown; all the quills, except the outermost, with dull light margins, on the primaries only at the base and central part, but on the secondaries and tertiaries on the entire inner web, overlapping to the outer web; under wing-coverts pale dull coloured, axillaries greyish white; tail-feathers olive-grey, with brighter margins to the outer web. Adult female in July, iris brick-red; young male in August yellow-ochre; bill rose-coloured, with the point of the upper mandible white, under mandible with a yellowish tinge; legs bluish grey. Wing rounded, the 6th quill longest, the 1st intermediate between the last and last but one and 22–26 mm. shorter than the 6th, the 2nd 12–15, the 3rd 6–7, the 4th 2–3, the 5th 1 mm. shorter. Tail strongly graduated, the outermost rectrix 48–51 mm., the 3rd 1–15 shorter than the tip of the tail; the four central rectrices nearly equal in length.

Specimens were obtained at the village of Yo-dzam-pu in July and August, at the village of Satani in December. Measurements:—♂. Total length 130 mm., expanse 160, wing 55, beak 8, tarsus 19, hind toe with claw 11, tail 70. ♀. Total length 145 mm., expanse 160, wing 56, beak 8, tarsus 18, hind toe with claw 11, tail 80.

This is a rare bird in Kan-su. Mr. Berezovsky met with it on only three occasions: once early in June 1886, near Yo-dzam-pu, in the district of Ming-djau, in the elevated mountains, in thin larch-woods, when a pair were seen perched on the trees, and resembled *Parus major* in habits. He again found it in August near the same village, when a small party, probably a family, were seen on the slope of a steep hill flying from tussock to tussock, and a young, not fully feathered, male was obtained. Lastly, in December of the same year a small flock was seen in the Ta-heh-kau river-gorge, south of the village of Satani, in the district of Si-gu-chen. They were in a bamboo-thicket at an altitude of about 8000 to 10,000 feet. The specimen here secured was in excellent plumage, though unfortunately the sex could not be determined, and this was the specimen figured.

LARVIVORA OBSCURA (*op. cit.* p. 97, pl. i. fig. 2).

♂ *ad.* Nasal feathers and lores black, this colour continued in a narrow streak halfway over the eye; rest of the crown, nape, upper part and sides of the neck, and the back dark slate-blue, paler in fresh-moulted birds, darker in worn plumage; rump like the back, but greyer; upper tail-coverts black; cheeks, ear-coverts, chin, throat, and breast glossy black; flanks smoke-grey, with a reddish tinge; middle of the abdomen white; crissum and under tail-coverts dirty white, with a reddish tinge; scapulars and lesser wing-coverts like the back; median and larger wing-coverts blackish brown; primaries blackish brown, with external greyish margins, which become white at the base; secondaries and tertiaries blackish brown, washed with dark blue-grey on the outer web and with an indistinct paler margin on the inner web; under wing-coverts pale reddish; the two middle rectrices black, the shafts at the base white; remaining tail-feathers white at the base and otherwise black, the outer feather with the basal third and the 2nd with the basal half white, the 4th white for $\frac{3}{4}$ and the 5th for $\frac{5}{6}$ of the length. Wing rounded, 4th and 5th quills equal in length and longest, the 3rd nearly equal to the 6th, sometimes shorter, sometimes longer, and $1\frac{1}{2}$ to 3 mm. shorter than the longest quill; the 2nd intermediate between the 7th and 8th, and 10–11 mm. shorter than the longest quill; the 1st rather more than half the length of the 2nd, and 29–32 mm. shorter than the longest quill; upper tail-coverts covering the tail to $\frac{3}{5}$ of its length. Iris very dark; bill black, in shape like that of *L. brunnea* and without bristles on the gape; legs blue-grey.

The female is not known. Only four males were obtained in the Yo-dzam-pu gorge, east of the Ming-djau district. They were all met with in bamboo-thickets at an elevation of 10,000 to 11,000 feet, on the tops of ridges dividing the valleys. On the 2nd August Mr. Berezovsky found four unfledged young on the ground in a bamboo-thicket, which had evidently fallen out of a nest, and shot the male, which was in moult, but it was so nearly dark that he could not wait to secure the female. The song is very flute-like and melodious.

Measurements:—♂. Total length 140–150 mm., expanse 210–240, wing 66–71, bill 15·5–16, tarsus 26–29, tail 51·53.

Pœcile hypermelæna (*op. cit.* p. 112, pl. ii. fig. 2).

Head glossy black, this colour extending wedge-shaped down to the back; back and rump olive-brown, the latter with a sandy tinge; on the sides of the head are white streaks from the base of the bill, passing along the cheeks and ear-coverts and merging into the brown of the back; chin and throat dull black; middle of breast, abdomen, and vent dirty white; sides of the breast dark olive-brown; flanks sandy brown; scapulars and upper wing-coverts coloured like the back; quills blackish grey, the inner tertiaries and the margins of the other quills olive-grey; underparts of the quills grey, with whitish margins to the inner webs; under wing-coverts and axillaries light buff; rectrices dark grey, with olive margins, which become grey towards the tips; iris dark; bill black, with paler edges; tarsus lead-grey: 4th, 5th, and 6th quills nearly equal and longest; 3rd nearly equal to or barely longer than the 7th, and less by 2 mm.

than the longest quill; the 2nd equal to the 9th, about 8 mm. shorter than the 3rd, and 10 mm. shorter than the longest quill; 1st about half the length of the closed wing and 20 mm. shorter than the 2nd; tail short, much shorter than the wing and nearly even, the middle feathers not more than 1·5 mm. longer than the outer ones.

This specimen agrees in coloration with *P. affinis*, but has the head glossy black, and not brownish black; the tail is even and not rounded, and it is smaller in size. It resembles *P. palustris* in the coloration of the head and in having the tail even, but has the black patch on the throat larger and in shape like that in *P. ater*; the underparts are less uniform in coloration, and the black on the head extends further down to the back.

Measurements:—Total length 107–110 mm., extent 195–197, wing 61, bill 9–9·2, tarsus 14, tail 47–49.

Only two specimens were obtained in Shen-si, near the borders of Kan-su and Szechuen, and none were seen anywhere else.

PŒCILE DAVIDI (*op. cit.* p. 113, pl. ii. fig. 4).

♂ *ad.* Crown and nape deep black, rather dull; below the black nape a rufous band crosses the back, joining the red on the breast; back dark olive-brown, with a grey tinge; tail and wing like the back, externally margined with dull ochraceous; sides of the head and neck below the eye white; chin and throat dull black; rest of the underparts chestnut-red, the middle of the abdomen paler; 4th and 5th quills longest, the 6th nearly as long, the 2nd equal to the 9th or 10th, the 1st about 21 mm. shorter; legs plumbeous; iris dark brown; bill black. Sexes alike. Young birds differ in having the cheeks and ear-coverts yellowish and the bill black, with the edges of the mandibles paler.

Measurements:—♂. Length 120–130 mm., extent 200, wing 66–67, bill 9·5–11, tarsus 15, tail 50–54. ♀. Length 115–125 mm., extent 197–202, wing 64–67, bill 9·5–11, tarsus 14–15·5, tail 50–51.

Specimens were obtained near the village of Satani in November, the village of Yo-dzam-pu in June, July, and August, the village of Totani in September and October, and near Chago in December. Mr. Berezovsky met with this Titmouse only in the mountains of S.W. Kan-su, where it is rare, occurring in small parties of five to ten individuals on the outskirts of the forest in valleys at an altitude of 7000 to 9000 feet. In habits it is a typical *Pœcile*, very agile, tame, and trustful. Its note resembles that of *P. affinis*, but is harsher and more discordant.

SITTA PRZEWALSKII (*op. cit.* p. 119).

♂ *ad.* Forehead, crown, and nape deep blue-black; upper parts deep slate-blue, the rump rather paler; wings blackish, externally margined with dark slate-blue; central rectrices like the back, the remainder black tipped with slate-blue, the outer ones with a subterminal white patch on the inner web; chin, sides of the head, and neck dull white, tinged with rusty rufous; rest of the underparts ochreous, the sides of the breast and the flanks rusty chestnut; upper mandible black, lower mandible greyish, with the tip dark; iris very dark brown; legs dark brown. Third and 4th quills nearly equal and longest, the 5th rather shorter by about 3 mm.; $2>6<5$; 1st about half the length of the closed wing and 39 mm. shorter than the longest quill; tail short, slightly emarginate, the middle tail-feathers 1–2 mm. shorter than the inner ones. Total length 125 mm., extent 225, wing 73, bill 17, tarsus 18, tail 43.

Only one specimen was obtained in the gorge of the River Yo-dzam-pu, in the district of Ming-djau, in July. It was in the outskirts of the forest, on the summit of the ridge between two valleys, and was on a dry dead branch, whence it darted into the air in pursuit of insects, like a Flycatcher. This species is very close to *Sitta leucopsis*, differing, it would seem, only in being smaller and in having almost the entire underparts strongly rufescent.

XVII.—*On the Birds of New Hanover.* By Ernst Hartert.

(Plate III.)

The Ornis of New Hanover, an island situated to the westward of the Gazelle Peninsula of New Ireland, 37 miles in length by about 20 miles in breadth, and averaging in height from about 1000 to 2000 feet above the sea, is practically unknown. It was therefore of considerable interest to the naturalists of the Tring Museum to receive collections from there which had been brought together by Captain Cayley Webster. It fell to my lot to examine the bird-skins, and I have given a list of the species in the appendix to Captain Webster's book 'Through New Guinea' (London, Fisher Unwin, 1898), pages 369 to 375. Captain Webster's collection, although of considerable interest, is very deficient in smaller birds, but several highly interesting and even new birds show what an amount of ornithological work remains still to be done in New Hanover. It is evident that there are some differences between the faunas of New Hanover and New Britain, although, of course, the majority of the forms are the same.

The following are the more interesting species of which we received examples :—

Edoliosoma remotum Sharpe.

Also known from New Ireland and Duke of York Peninsula.

Graucalus sclateri Salvad. (ex Finsch's MS.).

Described from New Ireland.

Pachycephala finschi Reichenow.

On p. 370 in Capt. Webster's book I mentioned this form as *P. melanura*, being misled by Prof. Reichenow's description, as a new species, of *P. dahli*, which is really the same as *P. melanura*, while the present form is different and has been described by Prof. Reichenow in Orn. Monatsb. vol. vii. p. 8 (1899).

Pitta novæ-hiberniæ.

Pitta novæhibernicæ (*sic !*) Rams. See Roth. Bull. B. O. C. viii. p. vii, and Ibis, 1899, p. 120.

MACROPTERYX MYSTACEA (Less.); see Nov. Zool. iii. p. 19. Wings 8·75 to 8·9 inches.

CACOMANTIS WEBSTERI Hartert. ('Through New Guinea,' p. 370.)

There are two specimens of the genus *Cacomantis,* which I consider do not belong to any of the previously described forms. One is probably an adult bird (sex not determined). It is metallic fuscous-grey on the upperside, more ashy on the head, more metallic brown on the wings; the tail glossy black, with small white tips; remiges dark glossy brown, with large buff spots near the bases of the outer webs. *Entire under surface uniform dark grey,* including the under wing-coverts, which show traces of rusty bars, and the under tail-coverts, which are sparsely but distinctly barred with rusty brown. "Iris and feet yellow, bill brown." Wing 120, tail 126, bill 18 mm. The other specimen, evidently a young bird in first plumage, is everywhere barred and spotted with pale rusty rufous.

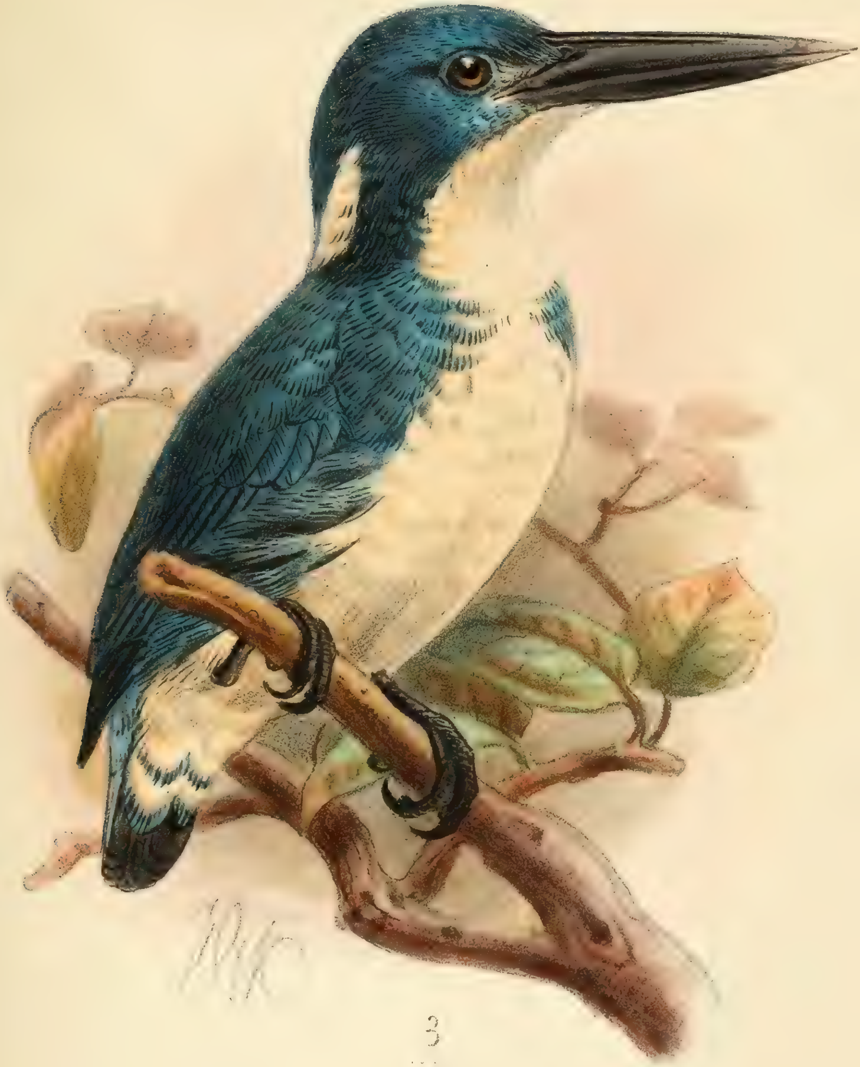
ALCYONE WEBSTERI. (Plate III.)

Alcyone websteri Hartert, 'Through New Guinea,' p. 371.

A single specimen (sex unknown) of this interesting new Kingfisher was shot on February 20th, 1897. It is above greenish blue, purer and more ultramarine on the back, rump, and upper tail-coverts, as well as on the hind-neck, duller on the forehead. Lores white, with black tips to the feathers. Tail blue. Primaries and primary-coverts black, the former whitish grey towards the bases of the inner webs. Secondaries black, with wide blue edges to the outer webs. Underside white with a slight buffy tinge. Under tail-coverts deeper buff, with blue tips. Sides of breast blue, flanks striped with blue and blackish. Breast crossed by a blue band, which is slightly interrupted in the middle. On the sides of the neck a large longitudinal whitish-buff spot. Bill and feet black. Wing 62, tail 43, bill 53 mm.

EURYSTOMUS SOLOMONENSIS Sharpe.

The bright blue tail, bright blue gular patch, and red bill, Ibis. 1899. Pl. III.



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J. G. Keulemans del. et Lith.   Mintern Bros. imp.

ALCYONE WEBSTERI

without distinctly black tip, leave no doubt that this is Dr. Sharpe's *E. solomonensis.* The occurrence here seems somewhat remarkable, but there are a number of forms extending from the Solomons northward to New Ireland and New Hanover.

LORIUS HYPŒNOCHROUS DEVITTATUS Hartert. (Nov. Zool. 1898, p. 530; 'Through N. G.' p. 371, sub nom. *L. hypœnochrous.*)

I have separated the birds from the D'Entrecasteaux group, Woodlark Island, New Britain, New Ireland, and New Hanover, under this name, from typical *L. hypœnochrous* from the Louisiade Islands, the latter having a black bar across the under surface of the wing, while *L. h. devittatus* has not. For possible exceptions and intermediate forms see Nov. Zool. *l. c.*

TRICHOGLOSSUS FLAVICANS Cab. & Rchw.

This is probably rather a subspecies of *T. massenæ,* differing from the latter merely in having the red colour lighter, the green more olive. It was originally described from New Hanover, and is known also from the Admiralty and Echiquier Islands.

HYPOCHARMOSYNA SUBPLACENS (Scl.).

A well-known bird on New Ireland.

LORICULUS TENER Scl.

Two specimens of this rare bird from New Hanover. The iris is straw-colour, the bill black.

PTILINOPUS RIVOLII (Prévost & Knip).

Known from New Ireland and Duke of York Peninsula.

PTILINOPUS JOHANNIS Scl.

Known from the Admiralty Islands only. It is very interesting to find these two closely-allied Pigeons together on the same island.

PTILINOPUS INSOLITUS Schl.

Three specimens were shot on New Hanover. Also

Chalcophaps stephani, *Phlogœnas johannæ*, and the inevitable *Calœnas nicobarica* were met with.

CARPOPHAGA RUBRICERA Gray.

The genus *Globicera* cannot be maintained. *Ptilinopus insolitus* differs exactly in the same way from other *Ptilinopi* as *C. rubricera* from the other *Carpophagæ*. That *P. insolitus* cannot be generically separated from the rest of the *Ptilinopi* is beautifully illustrated by *Ptilinopus granulifrons* from Obi, which differs from *P. hyogaster* almost only in its granuliform forehead. A fanatical genus-splitter would perhaps be tempted to make another genus for *P. granulifrons*, but an ornithologist taking a very broad view of "subspecies" might call *P. granulifrons* a subspecies of *P. hyogaster*. This case reminds me very much of the various forms of *Rhamphococcyx*, *Phœnicophaes*, &c., which differ in the shape of their nostrils, while they are quite or almost alike in coloration. That they cannot be put in different genera is illustrated by *Phœnicophaes microrhinus* Berl. (see Nov. Zool. ii. pp. 70–73).

MYRISTICIVORA SUBFLAVESCENS (Finsch).

Formerly known only from New Ireland.

MACROPYGIA sp. inc.

I have not been able to come to a satisfactory conclusion respecting a long-tailed Pigeon allied to, or the same as, *M. carteretia*.

ASTUR DAMPIERI (?).

Two immature Goshawks belong probably to this species.

BAZA BISMARCKI Sharpe.

Two skins. Very closely allied to *B. reinwardti*.

NINOX VARIEGATA (Q. & G.).

Two skins of this rare Owl from New Hanover.

RALLINA TRICOLOR Gray.

Two skins from New Hanover have very short wings. With more material they might be separable subspecifically.

Amaurornis moluccana (Wall.).

Of this Rail, too, more material might possibly show that it differs. Two skins are rather deep slaty-grey below.

Porphyrio calvus (?ellioti = neobritannicus).

It is difficult to come to any satisfactory conclusions about the forms of *P. calvus.* See Meyer and Wiglesworth in the 'Birds of Celebes.'

Excalfactoria lepida Hartl.

Hitherto known only from New Britain.

Megapodius eremita Hartl.

New Hanover birds have been described as *M. hueskeri* by Cabanis and Reichenow, but they do not seem to differ from typical *M. eremita.*

The interest attached to this little collection of mostly large and showy birds makes the lack of knowledge of the less conspicuous forms very much felt. New Hanover would undoubtedly be a most fruitful ground for ornithological field-work.

XVIII.—*On a Collection of Birds from the vicinity of Zomba, British Central Africa, forwarded by Lieut.-Col. W. H. Manning.* By Capt. G. E. Shelley. *With a Note by* P. L. Sclater.

[Lieut.-Col. W. H. Manning, who has been Acting-Commissioner of the Protectorate of British Central Africa during the absence of Mr. Alfred Sharpe, C.B., has not failed to continue the good work in Natural History inaugurated by his predecessors, and has forwarded to me a collection of birds, made in the vicinity of Zomba, and in the district between that and Lake Shirwa, by the Scientific Staff. The collection consists of 118 specimens, which have been examined by Capt. Shelley, and referred to 58 species. A list of the names is added, with references to the pages of Shelley's 'Birds of Africa.' All the species have been recorded in former lists of the birds from this part of Africa, except four, to which Capt. Shelley calls special attention.—P. L. S.]

I. *List of the Species represented in the Collection, with References to Shelley's 'Birds of Africa.'*

Name.	Shelley's 'Birds of Africa.'	Name.	Shelley's 'Birds of Africa.'
	Page		Page
1. *Chalcomitra gutturalis*	4	30. *Turtur damarensis*	137
2. *Anthothreptes longuemarii* ..	6	31. *Chalcopelia afra*	137
3. *Motacilla cinereicapilla*	12	32. *Lophoaëtus occipitalis*......	149
4. *Petronia flavigula*	19	33. *Buteo desertorum*	150
5. *Vidua principalis*	23	34. *Astur polyzonoides*	152
6. *Pyromelana flammiceps*	25	35. *Plegadis falcinellus*	156
7. *Estrilda subflava*	30	36. *Herodias ralloides*	156
8. ,, *astrild*	29	37. *Ardea ardesiaca*	157
9. *Oriolus larvatus*	41	38. *Ardetta podiceps*	158
10. *Lamprocolius sycobius*......	43	39. *Hydrochelidon leucoptera* ..	162
11. *Dilophus carunculatus*......	46	40. *Dendrocycna viduata*	171
12. *Sigmodus tricolor*	49	41. ,, *fulva*	171
13. *Laniarius mosambicus*......	53	42. *Querquedula punctata*	172
14. *Dryoscopus cubla*..........	55	43. *Pœcilonetta leuconota*	173
15. *Pycnonotus layardi*	60	44. *Thalassiornis leuconota*	173
16. *Cisticola cinerascens*	75	45. *Podicipes capensis*	174
17. *Hirundo puella*............	102	46. *Porphyrio porphyrio*	175
18. *Hapaloderma narina*	108	47. ,, *alleni*	175
19. *Eurystomus afer*	109	48. *Coturnix delegorguei*	179
20. *Coracias spatulata* vel *weigalli*	109	49. *Otis melanogaster*	185
21. *Melittophagus meridionalis*..	110	50. *Balearica chrysopelargus* ..	186
22. *Halcyon chelicutensis*	117	51. *Phyllopezus africanus*	187
23. *Schizorhis concolor*	120	52. *Hoplopterus speciosus*	188
24. *Ceuthmochares australis*	122	53. *Vanellus leucopterus*	189
25. *Centropus nigrorufus*	122	54. *Tringa minuta*............	191
26. *Coccystes glandarius*	123	55. *Totanus stagnatilis*	192
27. ,, *hypopinarius*	123	56. *Gallinago major* *.	
28. *Chrysococcyx cupreus*	124	57. *Himantopus himantopus*	193
29. *Indicator indicator*	124	58. *Glareola pratincola*	195

II. *Remarks on Species new to the Nyassan Avifauna.*

1. Coracias spatulata vel weigalli.

The specimen is in immature plumage, and has not assumed the elongated tail-feathers so characteristic of the adults. On comparing it with an immature specimen of *C. spatulata* in the British Museum, it differs only in having scarcely any trace of green on the throat. *C. spatulata* ranges from Benguela into the Makalaka and Ugogo countries, and *C. weigalli* is known by two specimens, apparently both adult, from Newala, north of the Rovuma River, so we have no clue as to which of these two forms predominates in Nyasaland.

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* *Gallinago media*, Shelley, op. cit. p. 192.

2. Totanus stagnatilis.

The Marsh-Sandpiper seems to be evenly distributed over the African Continent, in suitable damp localities, but is not very abundant there. It apparently migrates into Tropical and Southern Africa towards the end of August, to leave again early in April.

3. Gallinago major.

The Great Snipe is migratory like the preceding species, and ranges throughout South and East Africa. It might be best known to African ornithologists as the Short-billed Double Snipe, as the culmen measures about 2·5 inches, while that of its very near ally *G. nigripennis* measures about 3 inches. This is the character by which the two species may be most readily recognized.

4. Coturnix delegorguei.

The single specimen is a female. The species ranges over the African Continent south of 15° N. lat., and has been procured on St. Thomas's Island, 200 miles from the West Coast, and also at Aden.

XIX.—*On a second Collection of Birds from Inhambane, Portuguese East Africa.* By W. L. Sclater, Director of the South-African Museum. *With Field-notes by* H. F. Francis.

Since I wrote my previous article on this subject (see above, p. 111) I have received some further consignments from Mr. Francis, which contain examples of the following species.

I add Mr. Francis's field-notes, with his initials attached.

1. Corvus scapulatus Daud.: Sharpe, Cat. B. iii. p. 22.

"Female: iris smoky, almost black. Inhambane, 2nd October, 1898. This Crow is plentiful here, and very destructive to the natives' crops, especially the ground-nuts, which they scratch up and devour."—H. F. F.

This is a well-known and widely-spread African Crow.

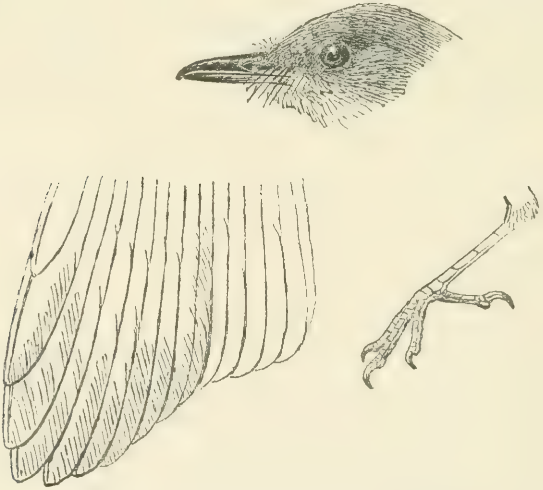
2. Cossypha quadrivirgata (Reichenow): Sharpe, Cat. B. vii. p. 43.

"Rufous-chested Flycatcher. Male: iris dark brown. This specimen was obtained, 9th October, 1898, in the thick bush, about twenty miles north of the Bay of Inhambane, near the coast. Its stomach contained one large grub, and remains of bees and other winged insects."—H. F. F.

This example agrees very well with the description given in the 'Catalogue of Birds.' The species appears to be rare and not to be represented in the British Museum. It is new to the fauna of South Africa. The original specimens were procured by Fischer at Kipini, in Witu, East Africa.

3. Xenocichla debilis, sp. nov.

"Male. North of Inhambane, 10-10-98. Frequents thick bush. Stomach contained wings and legs of bees and other insects."—H. F. F.



Head, foot, and wing of *Xenocichla debilis.*

Adult male. Crown and back of neck deep ashy grey, slightly washed with olive-yellow; back and upper tail-coverts yellowish green; wings and tail brown, washed, especially along the edges of the feathers, with yellowish green; sides of head leaden grey, slightly mottled with white; chin and throat white; breast more ashy white, streaked with sulphur-yellow side-margins to the feathers; under tail-coverts very pale ashy brown washed with sulphur-yellow; under surface of wings dark brown, with nearly all the coverts and broad inner edges to the quills pale sulphur-yellow. Total length 5·6 inches, culmen 0·55, wing 2·7, tail 2·8, tarsus 0·75. Bill dusky, with the greater portion and the keel of the lower mandible white.

The nearest ally to this apparently new species—as Capt. Shelley, who has examined the specimen, kindly points out to me—is *X. flavostriata* (Sharpe, Cat. B. Brit. Mus. vi. p. 100), which, however, is one-third larger and has a brown back. Other allied forms are, perhaps, *Andropadus marchei* Oust. N. Arch. Mus. (2) ii. p. 100 (1879), and *Xenocichla tenuirostris* Fischer & Reichen. J. f. O. 1884, p. 262. This species is the smallest of the genus. Dr. Reichenow of Berlin, to whom the specimen has been sent by my father for comparison, likewise agrees that it is undescribed.

4. Lagonosticta niveo-guttata (Peters): Sharpe, Cat. B. xiii. p. 274.

"Male: iris blackish blue, round the eyelids a narrow line of bare skin of turquoise-colour. North of the port of Inhambane, 1st October, 1898. This bird is not uncommon; it frequents thick undergrowth, and apparently finds its food among the leaves on the ground, as it is generally seen scratching about there."—H. F. F.

This is one of the species originally discovered by Peters in Mozambique. In the list of them given in my former paper (above, p. 111) the name was misprinted "*nigro-guttata*."

5. Sycobrotus stictifrons Fisch. & Reichen.: Sharpe, Cat. B. xiii. p. 424.

"Male: iris dull wine-colour. North of Inhambane, 30th September, 1898. This Weaver-bird is found all over this district, wherever there is thick bush."—H. F. F.

This is also a species not hitherto recorded from anywhere south of the Zambesi.

6. CENTROPUS NATALENSIS Shelley: id. Cat. B. xix. p. 362.

"(*a*) Male: iris bright red. Inhambane, 2nd October, 1898. (*b*) Female: iris bright red; legs leaden coloured; feet slightly darker. North of Inhambane, 5th October, 1898. Very common. Its note is a long combined succession of *ku-ku-ku*'s, loud and full; it can be heard everywhere in the early mornings and afternoons, and very often at night too."—H. F. F.

This is a widely-diffused South-African species, extending north to the Zambesi.

7. CEUTHMOCHARES AUSTRALIS Sharpe: Shelley, Cat. B. xix. p. 403.

"Female: iris dark wine-colour. North of the Inhambane. 8th October, 1898. This species is not uncommon, but rather difficult to procure on account of its habit of keeping to the thickest bush."—H. F. F.

8. GLAUCIDIUM CAPENSE (Smith): Sharpe, Cat. B. ii. p. 223.

"Female: iris bright yellow, pupil rather large and blue-black. North of Inhambane, 27th September, 1898. Native name here and in Gazaland 'Sikothlwan.'"—H. F. F.

XX.—*Additions to the List of Lower Yangtse Birds.*

By F. W. STYAN.

IN 'The Ibis,' 1891, pp. 316–359, 481–510, will be found a list of birds known to occur in the Lower Yangtse Basin, and in 1894, pp. 333–335, appears a short supplementary list: to these further observation has now added the following seventeen species, bringing up the total to 385 species (*Tringa subminuta* having been by mistake entered twice):—

15 *a.* GARRULAX PICTICOLLIS Swinhoe.

Specimens of this handsome Babbler, which is abundant in the wooded mountains of Chekiang and Fohkien, were obtained in the neighbourhood of Chinteh in Anhwei Province.

16 *a.* IANTHOCINCLA CINEREICEPS (Styan).

Trochalopteron cinereiceps Styan, Ibis, 1887, p. 166.

Specimens from the Chinteh district. This bird, a good account of the habits of which was given by Mr. Rickett in 'The Ibis,' 1897, p. 605, has a wide range, being common in Fohkien, Chekiang, up the Yangtse to Hupeh, and lately I have received one from Lung An, in the extreme N.W. of Sechuen.

17 *a.* POMATORHINUS SWINHOEI David.

Also from the neighbourhood of Chinteh, Anhwei.

22 *a.* PARADOXORNIS GULARIS Gray.

From the same district. Specimens shot in October and November are in fine newly-moulted plumage, the underparts washed with a creamy-yellow tinge. These birds congregate in large flocks, and are much less shy than *P. guttaticollis.* They are frequently found in dense cover, where shooting is almost impossible, but in more open country will allow their ranks to be decimated without much apparent concern.

40 *a.* REGULUS CRISTATUS (Linn.).

Two pairs shot at Lang Shan (famous for its breed of fowls), Kiangsu, near the mouth of the Yangtse, in February.

45 *a.* ARUNDINAX AEDON (Pall.).

A single specimen obtained at Kiukiang in May. This bird is no doubt frequently overlooked owing to its very close general resemblance to *Acrocephalus orientalis.*

46 *a.* LOCUSTELLA OCHOTENSIS (Midd.).

Two killed at Shanghai on 3rd and 4th June, a date which makes it probable that they breed in the neighbourhood.

51 *a.* UROSPHENA USSURIANA (Seebohm).

A single specimen obtained at Chinteh, Anhwei. The upper parts are dull olive-brown instead of warm chocolate, as in *U. squamiceps*, and the bill is much darker. It has the same scaly appearance about the head.

57 *a*. Alcippe hueti David.

Specimens from Chinteh, Anhwei.

57 *b*. Schœniparus brunneus (Gould).

Alcippe brunnea Gould.

Also from Chinteh, Anhwei.

79 *a*. Hypsipetes leucocephalus (Gm.).

This species, which has an extensive range, proves to be common at Chinteh in summer, and it is only surprising that it has not been met with elsewhere on the Yangtse up to date.

154 *a*. Dendrocitta sinensis (Lath.).

Common in the Chinteh district.

168 *a*. Megalæma virens (Bodd.).

Also from Chinteh. Rickett and I last year became very familiar with this bird at Ching Feng Ling in Fohkien, and it has for me a peculiar fascination. It usually frequents high trees, where its bright colours are not noticeable; but its peculiar hovering flight, with rounded back and spread tail, as it passes from branch to branch in search of berries, is very striking, and is accompanied by an audible *b-rrrr* of the wings. Its loud, ringing "cool-loo," sounding from some high clump on the hillside, can be heard at a great distance, and has a curiously plaintive charm about it.

178 *a*. Hierococcyx sparverioides (Vig.).

Under the heading *H. fugax* ('Ibis,' 1891, p. 481) I mentioned the note of a Cuckoo frequently heard near Hankow in spring, but only lately have been able to identify it for certain with this species, when one was shot and given to me. Just previously I had made personal acquaintance with the bird among the hills behind Ningpo, where it was abundant in April. It has a peculiar note, which may be rendered by the syllables "pee-pēē-wa." This is uttered first moderately loud in rather a low key; after a few seconds it is repeated louder and higher; again a pause and another call, and so on in a *crescendo* scale until it ends in a piercing scream, after which the bird is silent for some minutes. One result is that in cover it is difficult to localize the bird, as it appears to approach at each call.

190 *a*. SYRNIUM NEWARENSE (Hodgs.).

A beautiful specimen of this fine Owl was collected at Chinteh.

203 *a*. SPILORNIS CHEELA (Lath.).

Two obtained near Chinteh.

319 *a*. GALLINAGO GALLINULA (Linn.).

The Jack Snipe is a rare bird in China, and most birds reported as such prove to be merely small Common Snipe. It was therefore a pleasure to be presented with a veritable "Jack" shot at Taitsan, near Shanghai, on 10th April.

Note.—Chinteh lies on the south bank of the river, 15 miles inland of Tungliu, a small city close to the border of Kiangsi, which is marked on most maps. It will be observed that 12 of these species came from the hills in this neighbourhood, and show a very close relationship between its avifauna and that of Fohkien, lying directly south. In the latter province all the above, except the *Syrnium* and *Urosphena*, are common.

XXI.—*On Birds from West China.* By F. W. STYAN.

(Plate IV.)

IN June 1896 my two native collectors left Hankow by steamer for Ichang, in Hupeh, about 1000 miles from the mouth of the Yangtse. Thence they proceeded, on the south of the river, about 100 miles to Patung, close to the border of Sechuen, in which neighbourhood they remained, among wooded hills of moderate height, until the end of September. The season was very wet and the results were indifferent. The specimens collected were mostly of common species in poor plumage, the following being the most interesting :—

TROCHALOPTERUM ELLIOTI Verr.

BABAX LANCEOLATUS (Verr.).

YUHINA DIADEMATA Verr.

HODGSONIUS PHŒNICUROIDES (Hodgs.).

NOTODELA LEUCURA (Hodgs.).

An adult female and immature male were brought me from the neighbourhood of Ichang, which doubtless belong to this species; it is impossible, however, to be absolutely certain until an adult male has been secured, as the bird has not hitherto been met with in China.

N. montium Swinhoe is, so far as we know, confined to Formosa.

CULICICAPA CEYLONENSIS (Swains.).

CRYPTOLOPHA TEPHROCEPHALA Anders.

SITTA SINENSIS Verr.

EMBERIZA GODLEWSKII Tacz.

THAUMALEA PICTA (L.).

Examples of all these species had been previously sent from the same district, where they appear to be fairly common.

ÆTHOPYGA DABRYI (Verr.).

A good series of this brilliant Sunbird was collected for me in this district on a former trip, but on this occasion only one was obtained. The natives say they are plentiful in spring, when the peach-orchards are in blossom.

DENDROCOPUS PERNYI (Verr.).

A single specimen obtained—the only one I have ever handled, though Père David describes it as not very rare in Sechuen. Dated 31st July; in moult. Iris noted as red.

Returning to Ichang, the collectors started on November 2nd northward through Hupeh, passed through the south-western corner of Honan, crossing the great Tsing Ling range near the western border of that province, entered Shensi, and arrived at Si-ngan-fu on December 2nd.

About three months were spent in this district, where Wang, the head collector, was more or less at home, having hunted here along with the indefatigable Père David, nearly twenty-five years previously.

Trips were made to various likely places to the west and south-west on the flanks of Tai-pei-shan (the Great White Mountain), a high peak of the Tsing Ling range. Bitter cold and very heavy snow were experienced, and for eleven days they were confined in a mountain hut, half-starved, and unable to do any shooting: this, according to the local natives, was an interpolation by the mountain deities, who resented the approach of strangers with firearms. The district yielded some good birds, among which were:—

Merula ruficollis (Pall.).

Ruticilla hodgsoni Moore.

Trochalopterum ellioti (Verr.).

Ianthocincla lunulata Verr.

A single pair only was obtained.

Rhopophilus pekinensis (Swinhoe).

A single skin only. This species was obtained in the same district by Père David, but appears to be a rare bird.

Cinclus pallasi Temm.

Anorthura nipalensis (Hodgs.).

Four specimens were collected in this district, and nine in N.W. Sechuen. There is considerable variation in colouring and spotting, and the Shensi examples seem to be intermediate between *A. nipalensis* and *A. fumigata*, as noted already by Père David (Ois. de la Chine, p. 226).

Parus palustris L.

Acredula fuliginosa (Verr.).

Acredula glaucogularis Gadow, Cat. B. Brit. Mus. vol. viii. p. 65.

I have also obtained specimens of this Tit from the neighbourhood of Ichang. It is difficult to understand how it could have been confused with *A. glaucogularis* by anyone who had read the careful and accurate description by David and Oustalet, Ois. de la Chine, p. 292.

Tichodroma muraria L.

Anthus spipoletta (L.).

A single specimen killed in February.

Accentor montanellus (Pall.).

Lanius sphenocercus Cab.

A fine typical adult, shot in January.

Pycnorhamphus carneipes (Hodgs.).

One specimen only, in December; met with in Kansu by Przewalsky.

Emberiza godlewskii Tacz.

A widely-distributed species in Western China.

Fregilus graculus (Linn.).

A common bird in the mountains of West China.

Nine Shensi specimens vary in length of wing from 10½ in. to 12 in.; four from Sungpan (N.W. Sechuen) vary from 12¼ in. to 12¾ in., and the greater bulk of the body in the latter is equally marked. This large form is probably *F. himalayanus* Gould.

Gecinus guerini (Malherbe).

Dendrocopus cabanisi (Malherbe).

Ithaginis sinensis (David).

It was in this district that the species was first discovered by Père David. A good series was obtained, the killing of which was the chief cause of the local deities' anger.

Ibidorhynchus struthersi Vigors.

A common bird among these mountains; but, being short of cartridges, my collectors did not kill many.

Gallinago solitaria (Hodgs.).

One killed in December.

The two collectors left this region on 22nd March, 1897, and, travelling southwards *viâ* Han Chung, reached Lung An, in the N.W. corner of Sechuen, about the end of April. Until January 1898 they hunted in this extreme corner of China, shifting their quarters from time to time. The country is entirely mountainous, and is described by Mr. A. J. Little as forming part of the Tibetan Plateau; many parts are covered with dense forest, very thinly populated.

In a report of a journey to these parts written by Mr. G. J. L. Litton, of H.M. Consular Service, the approximate limit of trees is given as 11,000 feet; the elevations given below are quoted from the same source.

The following spots were selected as collecting-grounds:—

Lung An, 3100 feet.

Ho-chia-ko, about 15 miles north of Lung An and probably much higher.

Sungpan, about 100 miles W.N.W. of Lung An, 9500 feet. The surrounding country is much higher, perpetual snow is in sight, and the pass at the head of the valley, from which rise the headwaters of the Min and Fou rivers, is 13,000 feet.

Tung-pei, 20 miles S.W. of Sungpan and much higher. The inhabitants are mostly Tibetans, and the place must be on the very borders of Tibet.

Yang-liu-pa, about 100 miles S. of Sungpan. Fine forests and evidently high elevation.

Ho-chia-san, further south and within 65 miles of Cheng Tu, the capital of Sechuen.

The district of Moupin, famous as Père David's collecting-grounds, lies somewhere on the Tibetan border, a little south of where my men worked.

RUTICILLA FRONTALIS (Vig.).

Tung-pei, November. Upper parts of the specimens much suffused with brown.

Suiyang (Kweichow province), March. Very little brown above in examples from this locality.

Examples of this species have also been sent to me from near Ichang.

RUTICILLA SCHISTICEPS (Hodgs.).

Five examples from Sungpan and Tung-pei, October and November.

TROCHALOPTERUM CINEREICEPS Styan.

Lung An, December; not previously recorded from so far west. Identical with specimens from the extreme east.

TROCHALOPTERUM BLYTHI Verr.

Lung An and Yang-liu-pa, December; Ho-chia-san, January.

Described as a familiar bird and sometimes common, but only a few examples were brought back.

IANTHOCINCLA MAXIMA Verr.

A good series from Sungpan and Tung-pei, October, November, and December.

A familiar bird, frequenting the neighbourhood of houses.

IANTHOCINCLA ARTEMISIÆ David.

Yang-liu-pa, December.

A scarcer and more difficult bird to obtain; shot among small forest-growth at high elevation.

BABAX LANCEOLATUS (Verr.).

Lung An, December.

Apparently not common, as only one was brought back.

PTERORHINUS DAVIDI Swinhoe.

Sungpan, October and November.

CINCLUS PALLASI Temm.

Two specimens from Lung An and Yang-liu-pa and four others from Shensi province did not strike me at the time of labelling as differing from our Yangtse birds; but I now see that David considers his birds from Moupin to be *C. asiatica*, and perhaps mine should be referred to the same species.

CINCLUS CASHMIRIENSIS Gould.

One only from Sungpan, October.

PNOEPYGA ALBIVENTRIS (Hodgson).

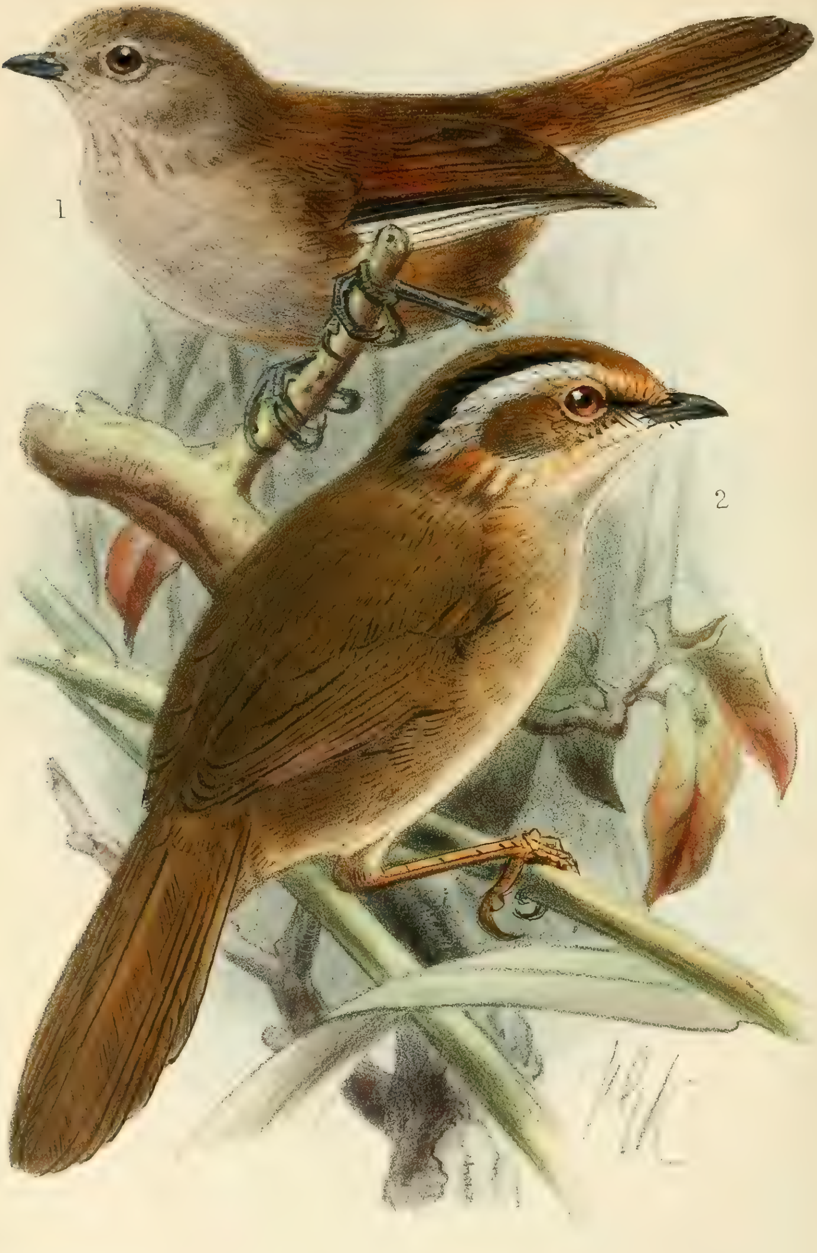
Lung An, December; a single specimen, labelled ♂. The spots on the back and ground-colour of lower parts are golden buff.

YUHINA DIADEMATA Verr.

A fairly common bird throughout Sechuen.

YUHINA GULARIS Hodgs.

A single specimen; Yang-liu-pa, December.



J G Keulemans del et lith

Mintern Bros imp

1 PROPARUS FUCATUS ♂
2 SCHŒNIPARUS VARIEGATUS ♂

Alcippe davidi Styan.

Lung An, December.

Moupinia pœcilotis (Verr.): Sharpe, Cat. B. vii. p. 630.

Pyctorhis gracilis sp. nov., Styan, Bull. B. O. C. 1899, no. lix. p. xxvi.

A single specimen from Lung An, December.

This interesting species has, I think, hitherto been only known from specimens collected by Père David, an inspection of which proves my supposed new *Pyctorhis* to be identical. In general appearance the bird closely resembles *P. altirostris,* but can be distinguished generically by its more slender build, comparatively shorter wing, and the absence of the marked rictal bristles which are conspicuous in *Pyctorhis.*

Proparus ruficapillus (Verr.).

Lung An, December; Ho-chia-san, January.

Proparus striaticollis (Verr.).

One only; Tung-pei, November.

Proparus cinereiceps (Verr.).

Proparus fucatus. (Plate IV. fig. 1.)

P. fucatus sp. nov., Styan, Bull. B. O. C. 1899, no. lix. p. xxvi.

These two very similar species may be dealt with together. Of the former, one only was brought back from Yang-liu-pa; of the latter, nine were obtained on a former trip in the neighbourhood of Ichang. The single specimen agrees exactly with specimens in the British Museum and with the figure in David and Oustalet's 'Oiseaux de la Chine,' pl. 73. The differences between the two may be tabulated as follows:—

	P. cinereiceps.	*P. fucatus.*
Head	Grey.	Earthy brown.
Back	Rufous.	Deep chestnut.
Rump, flanks, and under tail-coverts	Olive.	Bright rufous.

Leptopœcile sophiæ Severtz.

Sungpan, November. Found in small parties among brushwood; very active.

Lophobasileus elegans Przew.

Two labelled ♂, in plumage of ♀, probably young; Tung-pei, October. They were shot in a fir-tree, and are described as quiet birds, sitting motionless on a branch and occasionally springing into the air after insects.

Parus monticola Vig.

Yang-liu-pa, June, August, and November.

Parus palustris L.

Tung-pei.

Parus beavani Blyth.

A single example; Tung-pei, October.

Sitta prezwalskii Berezovsky & Bianchi.

Two specimens of this near ally of *S. leucopsis* were killed at Tung-pei in November. Originally discovered in Kansu.

Tichodroma muraria L.

Sungpan, October; Lung An, December.

Motacilla hodgsoni Gray.

Yang-liu-pa, June; Lung An, Sungpan, November; Ho-chia-san, January.

Accentor rubeculoides (Hodgson).

Sungpan, Tung-pei, November.

Pericrocotus brevirostris (Vig.).

An adult and a nestling; Yang-liu-pa, June.

Æthopyga dabryi (Verr.).

Yang-liu-pa, June.

Pyrrhula erithacus Blyth.

A pair shot off the nest in August, Yang-liu-pa. Unfortunately I stowed away the eggs, which numbered four, without measuring or describing them; but I remember they were pale bluish ground-colour with dark scratchings—more of the Hawfinch type than that of our common Bullfinch.

Carpodacus dubius (Przew.).

Tung-pei, Sungpan, October.

Carpodacus pulcherrimus (Hodgs.).

C. davidianus Milne-Edwards.

Tung-pei, November.

Acanthis brevirostris (Gould).

Two from Sungpan, November.

Emberiza elegans Temm.

Yang-liu-pa, August, November, December; Lung An, November, December; Ho-chia-san, January.

Found by Père David at Moupin. Seems to be a common breeder in Sechuen.

Emberiza godlewskii Tacz.

Sungpan, Tung-pei, November.

Emberiza melanops Blyth.

E. melanops Blyth; Styan, Ibis, 1891, pp. 353–354.

One from Yang-liu-pa, June.

This species is generally confused with *E. spodocephala* Pall.

Calandrella brachydactyla (Temm.).

A single example from Sungpan, September.

Spodiopsar sericeus (Gm.).

Lung An, June, November, December. This must be about the extremity of its range westward, where, from the dates, it appears to be resident.

Nucifraga hemispila Vig.

One from Yang-liu-pa, June.

Hypopicus hyperythrus (Vig.).

One female from Lung An (January) appears to be of this species rather than the eastern form *H. poliopsis*, which, however, it resembles in the dull colour of the underparts.

Chalcococcyx maculatus (Gm.).

A pair of this brilliant Cuckoo was shot in June at Yang-liu-pa, but the female unfortunately was lost. Their note was described to me as a feeble whistle.

Columba rupestris Pall.

One from Sungpan, September.

Columba leuconota Vig.

Two from Sungpan, November.

Tetrastes severtzowi Przew.

Two killed at one shot, while feeding in the snow; Sungpan, November.

Perdix sifanica Przew.

Sungpan, October; Tung-pei, November.

Crossoptilon auritum (Pall.).

Tung-pei, October, November.

Phasianus elegans Elliot.

Sungpan, October; Tung-pei, November.

Ithaginis sinensis David.

Tung-pei, October, November; Yang-liu-pan, August, September.

Pucrasia darwini Swinhoe.

None were actually obtained during this trip; but on a former occasion one was sent me from near Ichang, dated 8th September, in a stage of plumage which deserves attention. Although in most respects resembling a fully-adult bird, it shows no trace of the broad chestnut band which in the full-plumaged bird extends down the centre of the body from the throat to the vent. At first I was led to believe it to be of a new species; but specimens from Fohkien, kindly lent by Messrs. Rickett and La Touche, show that it is merely in an intermediate stage of plumage. Six specimens killed in winter show the chestnut band in process of development; in some only a trace is visible, in others more than half has appeared. The young cock doubtless resembles the female; at the autumn moult this plain plumage is assumed, and during the course of the winter the chestnut band gradually appears.

The young of *P. macrolopha* moults directly into the chestnut plumage.

Ibidorhynchus struthersi Vig.

Sungpan, November; Lung An, December.

The return journey was commenced in February by way of the Min river and Yangtse to Chungking. Thence a short trip was taken into Kweichow province, where Suiyang, about 50 miles from the northern border, was selected as a collecting-centre.

The avifauna of this district resembles very closely that of Anhwei, Chekiang, and Fohkien, a certain sprinkling of more western species being thrown in. Among the interesting birds met with were:—

TURDUS AURITUS Verr.

A single example killed in March; described as a fine songster.

RUTICILLA FRONTALIS (Vig.).

SUTHORA ALPHONSIANA Verr.

Apparently common.

STAPHIDIA TORQUEOLA Swinhoe.

SCHŒNIPARUS VARIEGATUS Styan. (Plate IV. fig. 2.)

S. variegatus sp. nov., Styan, Bull. B. O. C. 1899, no. lix. p. xxvi.

Eight specimens, shot in March and April. This species closely resembles *S. dubius*, from which it differs in its much less rufous upper parts, less vivid rufous crown, more olivaceous flanks and sides of breast, and blacker bill. It is intermediate between *S. dubius* and *S.* (*Alcippe*) *brunneus* (which lacks the white eyebrow), and is very close to *S.* (*Alcippe*) *genestieri* Oustalet (Bull. Mus. Paris, 1897, p. 210), with which, indeed, it may prove to be identical. The latter, however, when compared with a single skin of the present species, appeared to be more rufous and nearer to *S. dubius*. Provided that the present species is valid, we have four species known to occur in China, viz. *S. genestieri*, *S. variegatus*, *S. brunneus*, and *S. olivaceus*.

CRYPTOLOPHA RICKETTI Slater.

Known hitherto only from Fohkien; a single one shot.

MOTACILLA HODGSONI Gray.

Anthus rosaceus Hodgs.

A single example.

Propasser vinaceus (Verr.).

Aquila chrysaëtus (Linn.).

A handsome specimen, labelled ♂, but from its size more probably ♀. Wing 25 in.; tail 14 in.

In April this district was left, and the hunters, returning to Chungking, made their way by river to Hankow, arriving in May, just two years after the start.

XXII.—*Bulletin of the British Ornithologists' Club.*

Nos. LVIII.–LX.

No. LVIII. (December 31st, 1898).

The fifty-seventh Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 21st of December, 1898. *Chairman*: P. L. Sclater, F.R.S. Twenty-five Members and nine guests were present.

Mr. Ernst Hartert characterized three new species of birds from the Louisiade Archipelago. He said that this group of islands, situated to the south-east of New Guinea, had been visited by Macgillivray during the voyage of H.M.S. 'Rattlesnake,' when a few birds had then been collected, and that more recently Canon Tristram and Mr. De Vis had described a few new forms from various islands of the group, but no large collections of birds had ever been made there. Mr. Albert S. Meek had recently stayed on various islands of the group and collected a great number of birds for Mr. Rothschild's Museum. His collections showed that the proportion of species and subspecies peculiar to this group of islands was rather large, and that the various islands were inhabited by different forms. A few new species had already been described at former meetings of this Club, but exhaustive articles would soon appear on the collections in the 'Novitates Zoologicæ,' and were partly in the press. Examples of the following new species were exhibited:—

EDOLIOSOMA ROSTRATUM, sp. n.

♂ *ad.* Bluish slate-colour; ear-coverts darker, almost black; lores, chin, and line at gape black. Wings black, inner webs very broadly white, outer webs bordered with the colour of the back, but lighter. Central rectrices slaty-grey like the back, black along the shaft, broadly tipped with black; the other rectrices black with narrow grey tips, the outermost pair broadly tipped with grey. Bill very large and strongly hooked. Wing 135, tail 115, culmen from base 43–44, bill from nostril to tip 20·5–21 mm.

♀ *ad.* Above greyish brown, the crown bluish ash; a narrow pale rufous superciliary line. Broad stripe behind eye and lores blackish grey; ear-coverts pale rusty brown, with dark greyish stripes. Remiges blackish, outer webs narrowly, inner webs broadly, bordered with pale cinnamon. Central rectrices pale greyish brown, narrowly tipped with pale cinnamon; the rest blackish brown, broadly tipped with cinnamon. Underside pale cinnamon, the sides of neck and breast more or less barred with black.

Hab. Rossel Island.

MYZOMELA ALBIGULA, sp. n.

♂ *ad.* Above dark greyish black, the head and upper tail-coverts with slightly paler edges to the feathers. Tail blackish brown. Remiges blackish brown, outwardly narrowly edged with dusty grey; inner webs with broad pale ashy-white borders. Chin and throat pale brownish grey, with a short, more or less indistinct, dark red line on the lower margin. Chest dark ashy brown; remainder of underparts a little paler ashy brown, most of the feathers with slightly paler edges, thus producing a faintly streaked appearance. Under wing-coverts whitish grey. Bill, legs, and feet black. Wing 75, tail 58, culmen from forehead 23·5, tarsus 20 mm.

♀ *ad.* Smaller and paler, the abdomen almost whitish; throat whitish, in sharp contrast to the dark chest. Wing 68, tail 53, culmen 21 mm.

Hab. Rossel Island.

Myzomela pallidior, sp. n.

Both sexes alike in coloration and somewhat resembling the female of *M. albigula*, but above slightly more brownish: below lighter, the breast not much darker than the abdomen, the whitish throat not sharply in contrast with the chest. The red streak on the throat is distinct in the male, but not in the female; fore-neck with an ill-defined blackish spot just below the pale throat. ♂, wing 73; ♀, wing 67 mm.

Hab. St. Aignan Island.

The Hon. Walter Rothschild sent the description of a new subspecies of Cassowary as follows:—

Casuarius casuarius intensus, subsp. n.

♂ *ad.* The casque differs from that of *C. casuarius* in being very high and much more erect, the wattles almost entirely blue instead of dark red; the blue of the head and neck uniform and very dark; the orange of the hind-neck much restricted and separated at the upper end from the blue by a black crescent-shaped patch; naked sides of lower neck entirely uniform blue instead of red, bordered anteriorly with blue.

Hab. Unknown.

Mr. Rothschild also sent the description of a new Cormorant:—

Phalacrocorax traversi, sp. n.

Adult. No crest; crown, back of neck, and upper parts greenish steel-blue, much duller than in *P. onslowi*, and not showing a dorsal white patch; white alar bar broad and well-defined; tail-feathers black and twelve in number; throat and all under surface white; middle under tail-coverts black; feet reddish orange in skin. Nasal caruncles well-developed.

This species is exactly intermediate between *P. atriceps* and *P. verrucosus* in the disposal of the black and white on the sides of the head and neck. In *P. atriceps* the ear is situated in the middle of the white area, while in *P. verrucosus* the ear is in the middle of the black area. In the new species the ear is exactly on the border, half in the white and half in the black area.

Wing 305 to 310, tail 145, culmen 65, tarsus 65, outer toe and claw 110 mm.

Hab. Macquarie Islands. Sent by Mr. Henry Travers.

A note was read from Dr. Bowdler Sharpe calling attention to the differences exhibited by the Robin-Flycatchers (*Petrœca leggii*) from Southern and Western Australia. The examples from the latter country seemed to be distinct, and Dr. Sharpe proposed for them the name of

Petrœca campbelli, sp. n.

Similis *P. leggii,* sed fasciâ frontali albâ minore, et albedine alarum magis restrictâ.

Hab. W. Australia.

Mr. F. J. Jackson, C.B., sent for exhibition specimens of two apparently new species from Nandi in Equatorial Africa, for which he proposed the names of

Pholidauges sharpii, sp. n.

P. purpurascenti-niger: speculo alari albo nullo: gutture albicante, præpectore et corpore reliquo subtùs dilutè cervinis: subcaudalibus quoque cervinis: subalaribus et axillaribus nigris. Long. tot. 72 poll., culm. 0·55, alæ 4·15, caudæ 2·6, tarsi 0·85.

Parus nigricinereus, sp. n.

♂. Similis *P. funereo,* Verr., sed tectricibus alarum albido minutè apicatis: capitis plumis schistaceo marginatis: gutture toto schistaceo-plumbeo, haud nigro, distinguendus. Long. tot. 5·5 poll., culm. 0·5, alæ 3·2, caudæ 2·2, tarsi 0·9.

♀. Clarius schistaceo-plumbea: gastræo toto schistaceo.

Mr. E. Lort Phillips described two new species of birds from Somaliland:—

Caprimulgus torridus, sp. n.

C. similis *C. nubico* et *C. fervido,* sed maculis notæi rufis magnis conspicuis et alis rufescentibus distinguendus.

Long. tot. 8·0 poll., culm. 0·55, alæ 6·0, caudæ 4·0, tarsi 0·7.

Hab. Eyk, on the Howd plateau, Somaliland (*J. Benett Stanford*).

Distinguished from *C. nubicus* (which it resembles in having the white spot on the inner web of the first primary reaching to the shaft) by its much more rufous colour, the back and wings being spangled with large rufous spots at the end of the feathers. The first four primaries and the two outer tail-feathers have large white spots.

The specimen had been shown to Dr. Reichenow, Mr. Oscar Neumann, and Mr. Hartert, who all agreed that it belonged to an undescribed species.

GRANATINA HAWKERI, sp. n.

Similis *G. ianthinogastri,* sed ubique pallidior: pileo et interscapulio cinnamomeo-rufis: dorso rufescenti-brunneo: faciei colore ianthino minus extenso, et fasciâ angustâ frontali haud continuâ distinguenda. Long. tot. 4·8 poll., culm. 0·4, alæ 2·2, caudæ 2·4, tarsi 0·65.

Hab. Bari (*E. L. P.*), Dabuloc (*R. M. Hawker*), Lahello (*G. V. A. Peel*).

The light cinnamon colour of the head and mantle distinguishes the Somali form of the Hyacinth-bellied Weaver-Finch from the true *G. ianthinogaster* of Masailand, which has the back dark brown, contrasting with the chestnut head. The same light cinnamon colour pervades the throat and neck, and the blue on the face is not so extended.

The narrow frontal line of blue does not continue across the base of the forehead.

Mr. LORT PHILLIPS also exhibited the nest of *Eurocephalus rueppelli,* described by him in the 'Ibis' for 1898 (p. 406).

Dr. BOWDLER SHARPE sent the first sheets of a new 'Handlist of Birds,' of which the first volume would shortly be published by the Trustees of the British Museum. In its preparation Dr. Sharpe had already been engaged for the last five years, and he ventured to hope that ornithologists of every country would give him their assistance in endeavouring to make the new 'Handlist' as complete as possible. An attempt would be made in this new edition to incorporate all the fossil birds in their systematic places.

Mr. Sclater exhibited a skin of a Tanager (*Calliste pretiosa*) which had been obtained by Mr. A. H. Holland at his residence, Estancia Sta. Elena, in the Argentine Republic, on November 15th, 1897. It appeared to be in full adult plumage, and was labelled "♂. Bill, legs, and iris black."

Mr. Sclater remarked that this was the first occurrence of this species in the Argentine Republic, it having been previously known only from Paraguay and South Brazil (see Sclater, Cat. Birds B. M. xi. p. 114).

Mr. Philip Crowley exhibited some photographs of the nests and eggs of British Birds.

No. LIX. (January 30th, 1899).

The fifty-eighth Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 18th of January, 1899. *Chairman*: P. L. Sclater, F.R.S. Twenty-six Members and one guest were present.

Dr. Bowdler Sharpe laid on the table a copy of a MS. "Index" to the generic names employed in the 'Catalogue of Birds,' which had been prepared by Mr. F. H. Waterhouse and presented by Dr. Sclater to the Natural History Museum, for the use of students in the Bird-room of that institution. The Committee had agreed that this work should be published as an extra volume of the 'Bulletin' of the B. O. C.

Dr. Sharpe exhibited a specimen of a Petrel of the genus *Œstrelata* which had been forwarded to him by Dr. J. von Madarász, of the Hungarian National Museum at Budapest. This was the specimen which had been determined as *Œ. hæsitata* (*cf.* Eagle Clarke, Ibis, 1884, p. 202), and as such had been recorded in many ornithological works as the single instance of the occurrence of the species in Hungary. Dr. Sharpe identified the specimen as *Œ. incerta* (Schl.).

Mr. F. W. Styan described three new species of Chinese birds, as follows:—

Pyctorhis gracilis, sp. n.

Similis *P. altirostri*, sed minor: sordidè fulvescenti-brunnea, pileo vix rufescentiore: caudâ cinnamomeâ: facie laterali brunneâ, regione paroticâ angustè albido striolatâ: supercilio griseo vix evidente: gulâ et gastræo medio albis: pectore et hypochondriis cervino lavatis: crisso, tibiis et subcaudalibus rufescentioribus. Long. tot. 6·0 poll., culmen 0·4, alæ 2·0, caudæ 2·8, tarsi 0·9.

Hab. Lung An, N.W. Sechuan (10,000 feet).

Proparus fucatus, sp. n.

Similis *P. cinereicipiti*, sed lætiùs coloratus: capite brunneo, dorso castaneo, uropygio lætè rufo, hypochondriis et subcaudalibus lætè rufescentibus distinguendus. Culmen 0·3 poll., alæ 2·2, caudæ 2·2, tarsi 0·9.

Hab. Ichang, W. Hupeh.

Schœniparus variegatus, sp. n.

Similis *S. dubio*, sed minus rufescens, pileo minus rufescente: corporis lateribus olivascentioribus, rostro nigro distinguendus. Long. tot. 6·0 poll., culmen 0·55, alæ 2·3, caudæ 2·8, tarsi 0·95.

Hab. Suiyang, Kweichow.

Mr. Styan also exhibited specimens of some other rare species of birds from the north-west frontier of China, among them *Sitta przewalskii*, *Acredula fuliginosa*, &c.

The Hon. Walter Rothschild sent for exhibition the nest and egg of a Bird of Paradise, *Cnemophilus macgregoriæ* De Vis, which was found by native collectors on Mount Knutsford (alt. 11,000 feet), in British New Guinea. The nest was a well-built structure about 90 mm. high, 150–180 mm. wide, and with an inside cup of from 75 to 85 mm.

diameter and a depth of about 53 mm. in the middle. The walls of the nest consisted chiefly of green moss, interwoven with ferns and rootlets, and it was lined with skeletonized leaves and some feathers of *Casuarius*. The single egg—unfortunately damaged—had a very fine shell, was elongato-ovate in shape, white, with an irregular ring of brownish-black spots near the larger end and a few such spots all over, and with some underlying grey patches. It measured about 31·5 mm. in length and 20 mm. in breadth.

This contribution was further illustrated by the exhibition of a pair of adult birds of *Cnemophilus macgregoriæ* and two young birds of the same species.

The Hon. WALTER ROTHSCHILD also sent the following description of a new subspecies of Cassowary:—

CASUARIUS CASUARIUS VIOLICOLLIS, subsp. n.

This apparently undescribed form of Cassowary was most nearly allied to *Casuarius casuarius salvadorii*, but differed conspicuously in the colour of the naked parts and in the very large size, which fully equalled that of *C. casuarius australis*.

Bill much longer and straighter than in any other species of Cassowary. Casque horny brown, green at base. Face and a broad band running down the side of the bill bluish green. Base of lower mandible dark blue, with a yellow line running along one-third of the length of the mandible on each side. Wattles at base of fore-neck very large, round, and short, $3 \times 2\frac{1}{4}$ inches, pale blue at base, otherwise pink all over, entirely separate for their whole length, but close together. Auricular orifice larger than in any other Cassowary. Throat and fore-neck bright ultramarine-blue. Occiput and upper hind-neck pale greenish or eau-de-Nil blue. Lower hind-neck brilliant orange-scarlet. Naked lower sides of neck magenta-purple, bordered anteriorly with ultramarine-blue, posteriorly with orange-scarlet; the magenta-purple space deeply carunculated and sharply cut off from the red and blue borders, which are plain and smooth.

Hab. Aru Islands, ? Trangan Island. (Spec. in vivario Rothschildiano.)

Mr. W. B. Tegetmeier exhibited a very fine specimen of a hybrid Pheasant, *Phasianus reevesi* ♀ × *Phasianus colchicus* ♂.

No. LX. (February 27th, 1899).

The fifty-ninth Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 15th of February, 1899. *Chairman*: P. L. Sclater, F.R.S. Thirty-eight Members and nine guests were present.

Mr. Howard Saunders exhibited a specimen of a Levantine Shearwater (*Puffinus yelkouanus*) which had been shot by a wildfowler near Scarborough on the 5th of this month. The bird was a male, and had been sent in the flesh to the British Museum for determination.

Mr. H. J. Pearson exhibited, on behalf of Mr. W. Eagle Clarke, a female Grey Phalarope (*Phalaropus fulicarius*) in full breeding-plumage. This specimen had been procured by Mr. W. S. Bruce on Kostin Point, at the southern extremity of Meshdoshapsk Island, off the south coast of Novaya Zemlya, on the 19th of June, 1898. It was one of a pair, which Mr. Bruce was convinced were breeding on the island. This was the first record of the species in any part of Novaya Zemlya.

Mr. E. Bidwell exhibited a birds'-nesting stick, which had been found to be of great utility in his expeditions with Mr. H. J. Pearson, who also testified to the excellent results obtained by the invention.

The Rev. H. A. MACPHERSON exhibited a nestling Duck, which was the offspring of a female *Anas boscas* and a male *Dafila acuta.*

The Hon. WALTER ROTHSCHILD sent for exhibition the type of a new Thrush, which he described as follows:—

GEOCICHLA DUMASI, sp. n.

This fine new species has been discovered on the Island of Buru by Mr. Dumas, a companion of the late Mr. A. H. Everett, and is perhaps nearest to *G. dohertyi,* from the Lesser Sunda Islands, but is quite distinct.

♂ *ad.* Whole upper surface bright olive-rufous brown, with two tufts of creamy white feathers, one on each side of the rump. Lesser upper wing-coverts like the back; greater upper wing-coverts black, with two rows of large round white spots. Remiges blackish brown; the outer webs of the primaries with narrow, those of the secondaries with broad, olive-rufous borders. All wing-feathers, except the outer three, with large white patches near the base of the inner webs. Tail like the back, but darker. Whole throat and chest black; abdomen white; flanks olive-yellowish brown, some feathers on the side of the breast olive with black tips, as well as some of the white breast-feathers, thus forming a broken irregular band across the breast. Under tail-coverts creamy white. Under wing-coverts mixed black and white. Iris dark brown; bill black; feet light. Culmen 23, wing 94, tail 68, tarsus 32 mm.

Hab. Mt. Mada, Buru (3000 feet), August 1898.

Mr. ERNST HARTERT exhibited specimens of six new species of birds from Buru. They had been collected by Mr. Dumas, who had accompanied the late Mr. A. H. Everett during his last expeditions. Mr. Hartert pointed out that some of the forms were of great zoo-geographical interest. The entire collection would be fully discussed in 'Novitates Zoologicæ.'

The new forms were described as follows:—

ACANTHOPNEUSTE EVERETTI, sp. n.

♂ *ad.* Top of head greyish brown; superciliary line pale grey, not very conspicuous. Rest of upperside dark olive-green. Tail and wings blackish brown, edged with the colour of the back. Throat dirty white; remainder of under surface bright sulphur-yellow; sides of breast and body washed with greenish olive. Wing 59, tail 42, tarsus 22, culmen 13 mm.

♀ *ad.* Like the male, but a little smaller.

Juv. Throat like the rest of the under surface.

Hab. Mt. Mada, Buru.

PHYLLERGATES EVERETTI DUMASI, subsp. n.

Differs from typical *Phyllergates everetti* of Flores in being slightly more brownish on the nape, and less greenish, more rufous-olive on the back, and in having no indication of white on the outer rectrix.

Hab. Mt. Mada, Buru.

ERYTHROMYIAS BURUENSIS, sp. n.

♂ *ad.* Top and sides of head slate-colour; upper wing-coverts brownish slaty; remainder of the upper surface ashy brown. Rectrices and remiges ashy brown, with lighter brown outer edges; quills quite pale on the edges of the inner webs. Chin, throat, chest, and sides of body cinnamon-rufous; flanks washed with brown; middle of abdomen white; under tail-coverts buffy white. Iris olive; feet brown; bill black. Wing 69–70, tail 52, tarsus 21, culmen 16 mm.

♀ *ad.* Like the male, but smaller. Wing 63–64 mm.

Hab. Mt. Mada, Buru (3000 feet).

RHIPIDURA SUPERFLUA, sp. n.

♂ *ad.* Top and sides of head light brown; a line from base of bill to above the eyes brownish buff. Hind-neck and uppermost part of back like the head; remainder of upper parts bright cinnamon-rufous. Remiges brownish black, the inner edges of all whitish buff; outer edges of secondaries bright rufous. Rectrices blackish brown, the base and outer edges of basal part dark cinnamon-rufous; all, including the central pair, broadly tipped with cinnamon, darker on the middle ones. Throat white, with a black patch across the crop; remainder of under surface rufous-buff, the sides washed with brown; under tail-coverts and thighs cinnamon. Wing 68, tail 80, tarsus 18, culmen 13 mm.

♀ smaller, wing about 62 mm.

Hab. Mt. Mada, Buru (3000 feet).

PACHYCEPHALA MELANURA BURUENSIS, subsp. n.

The Thickhead, with golden-yellow under surface in the male, from Buru, has hitherto been considered the same as *P. clio* from the Sula Islands, but it differs considerably from the latter species in being of a much deeper dark greenish-olive colour on the upperside and in having all the upper wing-coverts pure black with narrow olive edges. The golden-yellow collar on the back of the neck is unbroken, the pectoral pure black collar being very wide and broadly united with the black sides of the head. The remiges are edged with the colour of the back; the tail black. The female differs also from that of *P. clio* of the Sula Islands in the colour of the under surface, which is pale buffish brown, lighter in the middle of the abdomen, darker and browner on the chest, and becoming more greyish on the throat. Under tail-coverts buffy yellow. The young male is more rufous below and darker on the back than the female, which is olive-brown above. ♂ *ad.* Wing 93, tail 73, culmen 18–19 mm.

♀ *ad.* Wing 89 mm.

Hab. Buru.

I consider all these yellow Thickheads to be geographical representatives of one species.

COLUMBA MADA, sp. n.

♂. Bill yellow, red at base. Top of head and neck pure grey, merging into the colour of the rest of the upper surface, which is slate-colour with light grey borders to the feathers. Rectrices deep slaty brown, with narrow pale brownish tips. Bare skin round eyes red. Sides of head, throat, chest, and breast buff, palest on the throat. Abdomen brownish vinaceous; under tail-coverts cinnamon. Feet and iris red. Wing 229, tail 170, exposed portion of culmen 16 mm.

♀. Like the male, but slightly smaller.

Hab. Mt. Mada, Buru.

Mr. Hartert also exhibited a new Thickhead, and characterized it as follows:—

Pachycephala peninsulæ, sp. n.

♂. Top of the head ashy brown; remainder of upper surface, including tail, olive-green. Remiges blackish; inner webs with whitish borders; outer webs edged with greenish olive. Lores ashy; an indistinct pale buffy eyebrow. Sides of head ashy brown. Throat white. Breast light yellowish grey, with darker shaft-lines; abdomen pale sulphur-yellow, with dark shaft-stripes. Under wing-coverts white, with a faint yellow tinge, those towards the bend of the wing brownish, with a yellow tinge. Iris brown; feet light bluish slate. Bill brown. Wing 78–79, tail 63, culmen 16·5, tarsus 20 mm.

Juv. Head pale brown, not ashy.

Hab. Cape York, N.E. Australia.

This form is very closely allied to and possibly only a subspecies of *P. griseiceps*.

Mr. E. Hartert also made some remarks on the Crested Larks (*Galeridæ*), and observed that there were some of his friends who had expressed to him their disbelief in the many sub-species of *Galerida cristata* recognized in an article in 'Novitates Zoologicæ' about two years ago; but he could assure the sceptics that there were many more forms yet to be discriminated, and that he would shortly describe some more races, examples of which he had recently received. The explanation of the great local variation of *G. cristata* lay entirely in their having absolutely limited areas of distribution. It was possible that one or two of the forms recognized in the above-mentioned article would not stand as good sub-species, but the majority were very distinct, and many more might yet be discovered. There was, however, one mistake in his memoir which he admitted. He had enumerated *Galerida theklæ* as one of the sub-species of *G. cristata*, but he found now that the secondaries, in the adult bird, were so much shorter than in *G. cristata*, and the first (spurious) primary was comparatively so much longer, that it would be necessary to follow Dr. Sharpe in recognizing *G. theklæ* as a distinct species, especially since recent observations had shown that forms of *G. cristata* and *G. theklæ* breed in the same area, while Mr. Hartert formerly supposed that they inhabited different parts of the country. The specific difference of *G. theklæ* had been insisted on by Brehm and Sharpe, and recently again (*in litteris*) by Kleinschmidt, but nobody had ever pointed out the most important characters. There were other features besides, in the form and size of bill and in the colour. *Galerida malabarica* would also have to stand as a species, being after all very different from *G. cristata*. Mr. Hartert hoped to return to the interesting subject of the Crested Larks on a future occasion. He considered that his investigations had, in fact, only just commenced.

Captain G. E. Shelley communicated the descriptions of four new species of birds from Nyasa Land :—

Melanobucco macclounii, sp. n.

Similar to *M. levaillanti*, but with the back of the head and neck black; a large bare patch round the eye, the posterior half of which is surrounded by the white of the entire sides and front of the neck, this also extending over the sides of the back. Total length 7·2 inches, culmen 0·8, wing 3·4, tail 2·6, tarsus 0·85.

Cisticola alticola, sp. n.

Allied to *C. angusticauda*, Reichen., from Uniamwesi, and with the back of neck, back, and wing-coverts uniform ashy grey; quills and tail brown, the latter with white ends, but without dark sub-terminal marks on the feathers, and the underparts white shaded with grey on the flanks. It is distinguished by having the entire ear-coverts, and head above the line of the gape, uniform deep rufous brown. Total length 5·6 inches, culmen 0·5, wing 2·25, tail 2·7, tarsus 0·8.

MALACONOTUS MANNINGI, sp. n.

Nearly allied to *Laniarius melamprosopus*, Reichen., but readily distinguished by the uniform deep grey colouring of the crown, back of neck, and upper back, and the almost entire absence of yellow tips to any of the wing-feathers. Total length 7·5 inches, culmen 0·6, wing 3·7, tail 3·6, tarsus 1·0.

MUSCICAPA NYIKENSIS, sp. n.

Similar to *M. lugens*, with the bill entirely black, but characterized by its large size and by having a narrow white forehead; the space in front of the eyes and the cheeks also white, like the throat. Total length 6·6 inches, culmen 0·5, wing 3·3, tail 3·1, tarsus 0·9.

Hab. Nyika Plateau, 6000 to 7000 feet (*Alexander Whyte*).

Mr. F. CURTIS exhibited a specimen of the Spotted Sandpiper (*Tringoides macularius*), which had been shot on the 2nd of February, at Finea, Co. Longford, Ireland, by Mr. Frank Roberts. The bird, which proved to be a female, was very tame, and was feeding at the time in a meadow much trodden by cattle by the side of the river Finea, within a short distance of the village.

Mr. J. G. MILLAIS exhibited a remarkable hybrid between a male Red Grouse (*Lagopus scoticus*) and a female Bantam Fowl.

Mr. W. EAGLE CLARKE sent a communication, as follows:—

A Bustard was obtained at St. Fergus, on the Pitfour estate, Aberdeenshire, on the 24th of October last, and Mr. J. G. Walker, who shot and owns the specimen, has recently submitted it to me for identification. I found it, as Mr. Walker suspected, to be an example of the Asiatic *Houbara macqueeni*, and a female in immature plumage. This is the fourth British and the first Scottish specimen, and it is the only female that has wandered as far west as Great Britain. The bird was unfortunately recorded by Mr. Walker as a "Little" Bustard in the 'Annals of Scottish Natural History' for January (p. 51). A similar fate befell the first English specimen (Zool. [1848] p. 1969).

Mr. E. Bidwell exhibited a series of nests of British birds built of abnormal materials. The following gentlemen were the contributors to this exhibition:—

Mr. P. Crowley.

Nest of the Chaffinch (*Fringilla cœlebs*), partly covered with scraps of printed paper.

Mr. A. Holte Macpherson.

Spotted Flycatcher (*Muscicapa grisola*). Nest composed of old wax vestas, cigarette-papers, &c. Taken near Hyde Park Corner, 1898.

Mr. J. Gerrard.

Common Wren (*Troglodytes parvulus*). Nest with open top, built under a bank. From the Shetland Islands.

Mr. H. Noble.

Madeiran Swift (*Cypselus unicolor*). Nest with tobacco-paper and feathers worked into the lining. From El Ancon, Teneriffe.

Mr. R. H. Read.

Two nests of the Pied Flycatcher (*Muscicapa atricapilla*), and two of the Arctic Tern (*Sterna macrura*).

A nest of the Pied Wagtail (*Motacilla lugubris*), built in a Blackbird's nest; and one of the Redbreast (*Erithacus rubecula*), with a Cuckoo's egg, built in an old Thrush's nest.

Mr. F. C. Selous.

Nest of the Chiffchaff (*Phylloscopus rufus*), built without any lining of feathers.

Mr. E. Bidwell.

Nest of the Nightingale (*Daulias luscinia*), lined with feathers. From Redhill.

Nest of the Sedge-Warbler (*Acrocephalus phragmitis*), lined with feathers. From Walton-on-Thames.

Nest of the Hedge-Sparrow (*Accentor modularis*), made of sticks and lined with feathers.

Nest of the Chiffchaff (*Phylloscopus rufus*), built without feather-lining. From the Lizard, Cornwall.

Nest of the Penduline Titmouse (*Ægithalus pendulinus*). From S. Europe.

Nest of the Chaffinch (*Fringilla cœlebs*), partly covered with scraps of wall-paper.

Nest of the Woodchat (*Lanius pomeranus*), built with flowers. From Malaga.

Nest of the Icterine Warbler (*Hypolais icterina*), built with feathers. Taken within the Arctic Circle in Norway.

Nest of the Moorhen (*Gallinula chloropus*), with the eggs concealed with paper. River Thames.

Mr. J. Whitaker.

Nest of the Common Heron (*Ardea cinerea*), partly constructed of wire. From Stoke, Notts.

On the motion of the Chairman, a hearty vote of thanks was given to Mr. Bidwell for the very interesting exhibition he had prepared.

XXIII.—*Notices of recent Ornithological Publications.*

[Continued from p. 152.]

34. *Albert on the Birds of Chile.*

[Contribuciones al estudio de Aves Chilenas, por Federico Albert. Entregas 1–5. Santiago, 1898.]

It was quite time that some resident naturalist should take up the study of the interesting avifauna of Chile, and we are pleased that Mr. Albert (Primer preparador del Museo Nacional) should have done so. This series of papers, of which five have reached us, seem to be separate copies of communications made to the 'Anales de la Universidad.' We trust they will be brought to a conclusion, as, when complete, they will give an account of Chilian birds vastly superior to the wretched compilation of Gay, although not so good as might have been expected in these days. Mr. Albert employs modern nomenclature, and follows mostly the names adopted in James's 'New List of Chilian Birds.' It would have been better if he had followed that lead even more closely in some cases. We observe that he calls the Chilian *Henicornis* "*phœnicura*," instead of "*melanura*," and unites these two distinct species as synonyms. He has probably never seen the true Patagonian *H. phœnicura* (*cf.* B. M. Cat. xv. p. 26), or would not have made the mistake.

35. *Barrett-Hamilton and Jones on Karaginski Island.*

[A Visit to Karaginski Island, Kamschatka. By G. E. H. Barrett-Hamilton and H. O. Jones. Geogr. Journ. xii. p. 280.]

We call attention to this account of a visit to a little-known island on the north-eastern seaboard of Kamchatka, which is illustrated by many good photographs of the natives and their habitations. The allusions made to the birds are comparatively few, but we are told that in the adjacent channel birds were numerous and Gulls and Terns were noticed. "Red-necked Phalaropes were plentiful," and a fine adult Albatross (*Diomedea albatrus*) was observed.

36. *Bolau on Bird-types in the Hamburg Museum.*

[Die Typen der Vogelsammlung des Naturhistorischen Museums zu Hamburg. Von Hermann Bolau. Mitth. Naturh. Mus. Hamburg, xv. 1898.]

Dr. Bolau gives a very useful list of the specimens of birds in the Natural History Museum upon which new species have been based by Hartlaub, Finsch, Fischer and Reichenow, Meyer and Wiglesworth, and other ornithologists. They are principally from West Africa (*Weiss*), Masailand (*Fischer*), the Pacific Islands (*Mus. Godeffroy*), and Talaut Islands, and represent altogether 99 species.

37. '*Bulletin of the Liverpool Museums.*' Vol. i. Nos. 3 and 4.

[1. On the Type of the Spotted Green Pigeon, of Latham, in the Derby Museum.

2. Note on *Turdinulus epilepidotus* (Temm.).

3. Note on a rare Species of *Cyanocorax—C. heilprini.*

4. Catalogue of the Picarian Birds (Pici)—Puff-birds, Jacamars, Barbets, Toucans, Honey Guides, and Woodpeckers—in the Derby Museum. By Henry O. Forbes and Herbert C. Robinson.]

The double number of the 'Bulletin of the Liverpool Museums' lately issued contains several ornithological articles. The energetic Director writes on and figures the type of the "Spotted Green Pigeon" of Latham, which is "certainly a *Calœnas*," "probably from one of the Pacific Islands," and should be recognized as *C. maculata* (Gm.). He also writes on *Turdinulus epilepidotus* (Temm.), and sets straight several vexed questions involved in its nomenclature. A rare species of *Cyanocorax* (*C. heilprini* Gentry, Pr. Ac. Sc. Phil. 1885, p. 90) is described and figured from a specimen in the Museum, formerly in the Derby Collection, and said to come from the "Rio Negro." This species appears to have been overlooked in the B. M. Cat. vol. iii., but is evidently quite distinct.

Messrs. Forbes and Robinson continue their catalogue of the birds in the Derby Museum, and treat of the Bucconidæ, Galbulidæ, Capitonidæ, Rhamphastidæ, Indicatoridæ, and Picidæ of that splendid collection, in which this Order is represented by 1871 specimens belonging to 404 (out of 670 described) species.

38. *Campbell on the Australian Bower-birds.*

[Nests, Eggs, and Play-grounds of the Australian *Ptilonorhynchinæ*, or Bower-birds, and their Allies. By Archibald J. Campbell, Esq., Melbourne. Proc. R. Physical Soc. Edinb. xiv. p. 13.]

Mr. Campbell describes in full detail the nests, eggs, and playing-bowers of the Australian Bower-birds of the genera *Ptilonorhynchus, Aelurœdus, Chlamydodera, Scenopœus, Sericulus,* and *Prionodura,* and illustrates his notes by many beautiful photographs. The bower of the Great Bower-bird, *Chlamydodera nuchalis*, which was discovered at Cambridge Gulf by Mr. H. H. Johnston, and is figured on plate iii., is a most remarkable structure.

39. *Finsch on* Carpococcyx.

[On the Specific Distinction of the Ground-Cuckoos of Borneo and Sumatra (*Carpococcyx radiatus* and *C. viridis*). By Dr. O. Finsch. Notes Leyden Mus. xx. p. 97.]

It is shown that *Carpococcyx viridis* of Sumatra is distinct from *C. radiatus* of Borneo, as already suggested by Count Salvadori (*cf.* Shelley, Cat. Birds, xix. p. 415). We may remind our readers of the recent discovery of a third species of this remarkable form of Cuckoo (*C. renauldi*) in Annam (see above, p. 145).

40. *Finsch on new Birds in the Leyden Museum.*

[On Seven new Species of Birds in the Leyden Museum from the Islands of Wetter, Kisser, Letti, and New Guinea. By Dr. O. Finsch. Notes Leyden Mus. xx. p. 129.]

Dr. Finsch describes *Sphecotheres hypoleucus, Stigmatops nobilis,* and *Gerygone wetterensis* from Wetter (north of Timor); *Gerygone kisserensis* from Kisser (north-east of Timor); *Gerygone pallida* and *Pseudogerygone virescens* from New Guinea; and *Zosterops lettiensis* from Letti, all from specimens in the Leyden Museum.

41. *Finsch on* Scops magicus *and its Allies.*

[Ueber *Scops magicus* (S. Müll.) und die verwandten Arten. Von Dr. O. Finsch. Notes Leyden Mus. xx. p. 163.]

Dr. Finsch writes on *Scops magicus* and its allies—*SS. manadensis, rutilus suluensis, siaoensis,* and *rutilus,* and strives to bring this difficult group into order with the aid of the fine series in the Leyden Museum.

42. *Hartert on Birds from the Papuan Islands.*

[Through New Guinea and the Cannibal Countries. By H. Cayley-Webster. London: T. Fisher Unwin, 1898. 1 vol. 8vo. 188 pp. Appendix by E. Hartert.]

Under this somewhat sensational title will be found a narrative of two very adventurous expeditions, during which some of the most interesting and least-known spots of the Papuan subregion were visited. Among these was Etna Bay, on the west coast of Dutch New Guinea (from which Capt. Webster barely escaped with his life), the Trobriand Islands, New Britain, New Hanover, and the Admiralty Islands. The natural-history collections all went to Tring, and many portions of them have already been described in 'Novitates Zoologicæ.' An appendix to the present volume by Mr. Hartert gives us an account of some of the rich spoils in birds obtained during the two expeditions. The collection made in German New Guinea was not extensive, but contained some fine Birds of Paradise and a young example of *Megatriorchis doriæ*. The list of birds obtained on the Aru Islands has already been published in 'Novitates Zoologicæ,' but some additions are now made to it and two new subspecies are described—*Rhectes ferrugineus brevipennis* and *Syma torotoro tutelare*. The series from Etna Bay and Triton Bay, in Western New Guinea, was valuable, as specimens are rarely obtainable from this coast, and are much required for comparison. Here, in Etna Bay, an adult example of *Megatriorchis doriæ* was procured. Of the collection obtained by Capt. Webster in New Hanover, which, so far as we know, had never been previously visited by a European collector, Mr. Hartert gives us a full list of the land-birds, comprising examples of some 34 species. Two of these, *Cacomantis websteri* and *Alcyone websteri* (see above, p. 278, Pl. III.), are described as new. The collection shows that the avifauna of New Hanover is not identical with those of New Ireland and New Britain, but contains some indigenous species and an admixture of forms met with in the Admiralty Islands.

43. *Hartert on Birds from Ecuador.*

[On a Collection of Birds from North-western Ecuador, collected by Mr. W. F. H. Rosenberg. By Ernst Hartert. Novitates Zool. v. p. 477.]

This is an account of a collection from the valleys and mountains of North-western Ecuador, which contains examples of 232 species. It is preceded by some very useful notes by Mr. Rosenberg on the exact localities where the specimens were obtained. Would that the excellent example thus set were followed by every collector! The most important point is Cachair, on the river of that name to the northward of Esmeraldas. The new species and subspecies have been mostly already characterized, but we observe *Capsiempis flaveola magnirostris, Pipra mentalis minor, Heteropelma rosenbergi, Myrmetherula viduata, Formicarius analis destructus, Strix flammea contempta, Columba subvinacea berlepschi,* and *Geotrygon veraguensis cachairensis,* now named for the first time. Other noticeable species are *Turdus daguæ, Caprimulgus rosenbergi, Neomorphus radiolosus,* and *Pionopsitta pulchra,* as also the following species, which are figured: *Nemosia rosenbergi, Buthraupis rothschildi, Odontophorus parambæ,* and *Crypturus berlepschi.*

44. *Hartert and Butler on Birds from Perak.*

[A few Notes on Birds from Perak, Malay Peninsula. By Ernst Hartert and A. L. Butler. Novitates Zool. v. p. 506.]

After a few useful words on previous authorities on the birds of Perak, systematic notes are given on 13 species, of which *Iole tickelli peracensis* and *Gecinus rodgeri* are described as new.

45. *Hartert on Humming-birds.*

[Further Notes on Humming-birds. By Ernst Hartert. Novitates Zool. v. p. 514.]

Mr. Hartert's remarks on his favourite group relate to species of *Cyanolesbia, Florisuga, Polyerata, Hylocharis, Eulampis,* and other genera, and relate to various points of identity and synonymy. He describes *Hylocharis ruficollis maxwelli,* from Eastern Bolivia, as a new subspecies.

46. *Hartert on the Birds of Sudest Island.*

[On the Birds collected on Sudest Island, in the Louisiade Archipelago, by Albert S. Meek. By Ernst Hartert. Novitates Zool. v. p. 521.]

Mr. A. S. Meek visited Tagula or Sudest Island, near the eastern end of the Louisiade group, in April 1889, and made "large and fine collections." Mr. Hartert now gives us an account of the birds and refers them to 42 species, of which the following are described as new:—*Chibia carbonaria dejecta, Graucalus hypoleucus louisiadensis, Edoliosoma amboinense tagulanum, Rhipidura setosa nigrimentalis, Miagra nupta, Myzomela nigrita louisiadensis, Zosterops meeki*, and *Lorius hypœnochrous devittatus.* Papers on the other islands of the Louisiade group visited by Mr. Meek are to follow.

47. *Lee's Photographs of British Birds.*

[Among British Birds in their Nesting-Haunts, illustrated by the Camera. By Oswin A. J. Lee. Parts XII. & XIII. 4to. Edinburgh, 1898–99.]

In Part XII., which completes vol. iii., the breeding-haunts of the following species are figured:—*Certhia familiaris, Turdus merula* (two plates), *Anthus obscurus, Pica rustica, Columba palumbus, Acrocephalus phragmitis, Cinclus aquaticus, Fulmarus glacialis*, and *Tringa variabilis.* Part XIII. contains:—*Turdus viscivorus, Larus marinus, Lanius collurio, Alauda arvensis* (two plates), *Buteo vulgaris, Ruticilla phœnicurus, Gecinus viridis, Linota cannabina*, and *Sylvia hortensis.* Among the most pleasing, to our taste, are those of the Tree-creeper, Blackbird, Rock-Pipit (exquisite), Red-backed Shrike, Sky-Lark, Buzzard, Redstart, Green Woodpecker (by the way there is a misprint of *vividis* for *viridis* on p. 33), Linnet, and Garden Warbler, while some of the vignettes are, as usual, spirited. Many interesting facts are to be found in the letterpress, such as that the severe winter of 1895–96 almost exterminated the Mistle-Thrush near Doune, in Perthshire; the remarkable increase in the numbers of the Redstart along Strathspey during the last few years; and the important part played by the far too numerous Starlings in annexing the breeding-holes of the Green Woodpecker and driving that bird away. That perilous adventures are not unknown may be seen on reference to the narrative of the photographing of the Great Back-backed Gull's nest (which was easy), and then the Fulmar's, which was ever so little further off *in yards,* though the return from it cost four hours of the hardest climbing, with heavy odds against return at all!

48. *Meerwarth on the Moulting of Birds of Prey.*

[Beobachtungen über Verfärbung (ohne Mauser) der Schwanzfedern brasilianischer Raubvögel, nebst einem Beitrag zur Phylogenese der Raubvogelzeichnung. Von Hermann Meerwarth. Zool. Jahrb. xi. p. 65.]

This essay is based on a careful study of individuals of four species of Brazilian Raptores (*Urubitinga zonura, U. schistacea, Heterospizias meridionalis,* and *Rostrhamus sociabilis*) kept alive at Para, and seems to show most clearly that the tail-feathers of these birds change their colours without moult. Some excellent coloured plates illustrate the observations. No one interested in this much-vexed subject should fail to consult Herr Meerwarth's important memoir.

49. *Mercier on the Ostrich-farm at Matarieh.*

[Une Visite à la Ferme d'Autruches à Matarieh, près de Caire. Bull. Soc. d'Accl. 1898, p. 250.]

This is an account of a visit paid to the well-known Ostrich-farm at Matarieh, near Cairo (*cf.* P. Z. S. 1895, p. 400), and contains many particulars of interest. Although the extent of the farm is small (6·25 hectares), it contains about 1500 Ostriches. Contrary to usual belief, Ostriches, it would appear, are strict monogamists, and, as we are informed upon good authority, the pair take turns in incubation.

50. *Mott on the Origin of Organic Colour.*

[Two Papers on the Origin of Organic Colour. By T. F. Mott. 8vo. Leicester, 1898.]

In two essays under one cover Mr. Mott propounds certain new views concerning the colours of animals. The author has some physical notions which are not altogether easy of comprehension, but which he expounds as the prime causes of colour-phenomena in both animals and plants. He arrives at one result which appears to be in accord with our knowledge, and that is that embryos and more simple types of animal and vegetable life have the more simple coloration. The reason for this is that in them "the molecular motions are comparatively free" and indefinite; that afterwards they become "fuller, richer, more definite, and less capable of further modification." "Brilliant coloration," concludes the author, "is a mark of the maturity of some organic force-wave, in which the molecular rhythm has reached its maximum simplicification" (!).

51. *Noble's List of European Birds.*

[A List of European Birds, including all those found in the Western Palæarctic Area, with a Supplement containing species said to have occurred, but which, for various reasons, are inadmissible. By Heatley Noble, F.Z.S. 8vo. London: R. H. Porter, 1898.]

In this exceedingly useful list, Mr. Noble includes 743 species as entitled to places among the birds of Europe; while there are 89 which have not yet established their claims, and many of these have, indeed, no right to serious consideration. We notice an incongruity in the fact that whereas Mr. Noble includes—very justly—the Asiatic Golden Plover, *Charadrius fulvus*, among European species, he places the American form, *C. dominicus*, among the outsiders; although the latter has undoubtedly been obtained in Great Britain (and therefore in Europe) as well as the former. For persons who do not distinguish the forms specifically, the earliest name is *C. dominicus*; but that is another story. In dividing the Order Tubinares into Families, Mr. Noble has forgotten to insert Puffinidæ after his no. 714; while the printers have got past him with C*a*rthiidæ for Certhiidæ (p. 17). Undoubtedly the compiler of a List with so few blemishes merits our congratulations.

52. *Oberholser on the Wrens of the Genus* Thryomanes.

[A Revision of the Wrens of the Genus *Thryomanes*, Sclater. By Harry C. Oberholser. Proc. U.S. Nat. Mus. xxi. p. 421.]

After preliminary remarks and redrawing the differential characters of the four allied genera *Thryothorus*, *Thryo-*

manes, *Troglodytes*, and *Anorthura*, Mr. Oberholser gives an "analytical key" to the 15 species and subspecies of *Thryomanes* and proceeds to describe them. They are all forms of *T. bewicki*, of which 13 are ranked as subspecies and 2 (*T. insularis* of Socorro Island and *T. brevicaudus* of Guadalupe Island) as of full specific rank. Seven of the subspecies are now described and named for the first time. In the 'Biologia' we find most of these "subspecies" grouped under one head, and we are not at all sure that this is not the best way of treating them. We fancy that Mr. Oberholser would find it difficult to sort out examples of some of his subspecies, if he did not know their exact localities.

53. *Pycraft on the Pterylosis of the Owls.*

[A Contribution towards our Knowledge of the Morphology of the Owls. By W. P. Pycraft, A.L.S., M.B.O.U. Trans. Linn. Soc. 2nd ser. Zool. vii. part 6.]

Mr. Pycraft has studied the pterylosis of some twenty species of Owls, and in a well-written memoir of fifty pages, illustrated by six well-drawn plates, he gives us the results of his investigations on this important, but too little studied, department of bird-structure. The pterylosis of *Asio accipitrinus* is fully described, and that of the other species compared with it. The author does not deviate from the now usually adopted division of the Striges into the two families Asionidæ and Strigidæ, but indicates several minor alterations in classification as desirable. For example, he would relegate the Snowy Owl to the genus *Bubo*, and unite *Speotyto* and *Carine*. An interesting disquisition on the variations of the structure of the external ear in the Owls is illustrated by two plates, and gives us a full statement of our present knowledge of this subject. The structure of the neossoptiles in *Speotyto* is also described.

54. *Rothschild on certain Parrots.*

[Notes on some Parrots. By the Hon. Walter Rothschild. Novitates Zool. v. p. 509.]

These remarks are upon some rare Eastern Psittacidæ of which specimens have lately been received at Tring. Mr. Rothschild proposed to change the name of *Eos rubra* to *Eos bornea*, to which we could not agree, as the species is not found in Borneo. Excellent figures are given of it (plate xviii.) and of the remarkable *Cyclopsittacus macilwraithi* of New Guinea.

55. *Rothschild on a new Cassowary.*

[*Casuarius loriæ*, sp. nov. By the Hon. Walter Rothschild. Novitates Zool. v. p. 513.]

A Cassowary from the hills of British New Guinea is characterized as *C. loriæ*. It is allied to *C. picticollis*, but has a red neck.

56. *Salvadori and Festa on new Birds from Ecuador.*

[Viaggio del Dott. E. Festa nella Repubblica dell' Ecuador e regioni vicine.—XIII. T. Salvadori ed E. Festa. Descritione di tre nuovi Specie di Uccelli. Boll. Mus. Zool. ed Anat. Comp. R. Univ. Torino, xiii. No. 330.]

Three new species, based on specimens obtained by Signor Festa during his recent journeys in Ecuador, are characterized as *Pachyrhamphus xanthogenys*, *Dendrocincla brunnea*, and *Grallaria periophthalmica*.

57. *Seebohm's 'Monograph of the Thrushes.'*

[A Monograph of the Turdidæ, or Family of Thrushes. By the late Henry Seebohm. Edited and completed (after the Author's death) by R. Bowdler Sharpe, LL.D., F.L.S., &c. Part V. Imperial 4to. London: Henry Sotheran & Co., 1898.]

The Monograph of the Thrushes makes excellent progress. We agree with the Editor in his views that *Turdus phæopygoides* and *T. spodiolæmus* are not properly separable from *T. phæopygus*. Owing to the numbers of the plates not being stated in the letterpress, there is sometimes a difficulty in finding the plate referred to, and it is not quite clear to us why the *number* of the plate should not be given in the letterpress in every case.

The following species are figured in this part:—*Turdus* *phæopygus, T. phæopygoides, T. crotopezus, T. tristis, T. leucauchen, T. albicollis, T. leucomelas, T. gymnophthalmus, T. murinus, T. comorensis, T. plebeius, T. obsoletus, T. fumigatus, T. hauxwelli, T. albiventer, T. grayi, T. casius.*

58. *Stejneger on the Birds of the Kuril Islands.*

[The Birds of the Kuril Islands. By Leonard Stejneger. Proc. U.S. Nat. Mus. xxi. pp. 269–296, 1898.]

It is probable that very few persons, even among naturalists, realize the fact that this storm-beaten and dangerous archipelago is 630 miles long (equal, roughly, to the length of the British Islands including the Shetlands), and still fewer have any idea that at some undefined portion of the chain is the meeting-place of two distinct faunas, namely the one coming from Kamchatka in the north, and the other from Yezo in the south. Wosnessenski in 1845–46 wintered on Urup and made collections in several of the larger islands; but his specimens, sent to the St. Petersburg Museum, have never been worked up systematically. Since his time, Capt. H. J. Snow is the only person who has made important collections, and of these some account has been given in Blakiston and Pryer's 'Birds of Japan,' but unfortunately few specimens have any locality less vague than "Kuril Islands" attached to them. Dr. Stejneger was not able to make a prolonged stay in this chain, but he visited some of the Middle Islands in 1896, and his account of the avifauna not only includes all that is known up to date, but also rounds off appropriately his experiences of the Commander Islands and Bering Sea, further northward. The species of birds now recorded are 146 in number, and Dr. Stejneger's list forms a useful commentary on the remarks on birds in Capt. Snow's 'Notes on the Kuril Islands,' published by Murray for the Royal Geographical Society, in 1897, with some excellent maps. This little-known work is essential to a student of the district; and we observe with satisfaction that the orthography "Kuril" has the sanction of both English and American authorities. There is hope that Bering may, in time, eject "Behring," even in newspapers.

59. *Stirling and Zietz on a Fossil Struthious Bird from Australia.*

[*Genyornis newtoni*—a Fossil Struthious Bird from Lake Callabonna, South Australia. Description of the Bones of the Leg and Foot. By E. C. Stirling, M.D., F.A.S., and A. H. C. Zietz, F.L.S. Trans. R. Soc. of S. Australia, 1896, vol. xx. p. 191, pls. iii.–v.]

This paper contains the first instalment of the detailed description of the skeleton of the remarkable Struthious bird *Genyornis newtoni*, a brief notice of the preliminary account of which has already appeared in this journal. The bones of the hind limb are now described and compared with those of other Ratite birds, and a number of excellent photographic figures of the specimens are given.

The femur seems to be chiefly notable for the smoothness of the shaft, which is trilateral in section, the absence of any posterior projection of the trochanter such as occurs in *Dinornis*, and the presence of pneumatic openings both at the upper end of the bone and in the popliteal fossa. The tibio-tarsus has a very large cnemial crest, which rises high above its articular surface; the lower end of the shaft is strongly inflected inward; and there is a very oblique, nearly median extensor bridge. In the metatarsus there is a well-developed intercondylar process, and the hypotarsus is simple; the lower end of the groove between the third and fourth trochleæ is perforated by a foramen. The second trochlea is extremely reduced, and the toe which it bears is very slender, although the first phalangeal is longer than that of the middle toe. In digits 3 and 4 there are four phalanges, which are much flattened from above downward. So far as the hind limb is concerned *Genyornis* therefore seems to have been particularly remarkable for the reduction and comparatively small size of the foot compared with the massiveness of the upper part of the leg, and, in the reduction of its inner toe, it seems to have been well on the way to the condition seen in the Ostrich, in which this toe is absent and the trochlea reduced to a small pointed process of bone. It may be suggested that the ancestor of *Genyornis* may have been a swamp-loving bird with massive limbs and three well-developed toes like *Æpyornis*, and that, a gradual desiccation of the country taking place, it underwent modifications adapting it to a more desert life, attaining the condition above described. Finally, however, the drought became intense enough to lead to the destruction both of this bird and of its contemporary mammals, e. g. *Diprotodon*; but this is a mere suggestion and must be taken for what it is worth. As to the affinities of *Genyornis,* it is perhaps better to wait till the description of the rest of the skeleton is published before expressing an opinion, but it may be remarked that its relationship with *Dromornis australis* is very close. The specimen upon which that species was founded was a very imperfect right femur which in many points resembles that of *Genyornis,* while the differences pointed out by the authors may be, in part at least, explained by the imperfect and more or less crushed condition in which all the specimens are found. It is significant that the portions of a tibia ascribed by Owen to *Dromornis* are regarded by the authors as belonging to *Genyornis.* Messrs. Stirling and Zietz are to be congratulated on having made so substantial an addition to our knowledge of this interesting type, and their account of the skull and remainder of the skeleton will be awaited with much interest.—C. W. Andrews.

60. *Winge on the Birds of Greenland.*

[Conspectus Faunæ Groenlandicæ. Aves.—Grönlands Fugle. Af Herluf Winge. Meddelelser om Grönland, xxi. 1898.]

In this valuable contribution to the ornithology of Greenland there are 37 pages of complete bibliography at the beginning and a very necessary map at the end. The species now known as regular inhabitants or frequenters of Greenland are 53 in number, while 8 are of irregular occurrence, and 68 are exceptional wanderers, the total being 129 species. Mr. Winge is becomingly strict as to his list; and he will not even admit a pelagic bird like *Puffinus griseus,* although seen by an excellent observer about sixty miles south of Cape Farewell, because it has not actually been obtained in Greenland waters.

XXIV.—*Letters, Extracts, Notices, &c.*

We have received the following letters, addressed "to the Editors of 'The Ibis'":—

Sirs,—In the January number of this year's 'Ibis,' p. 7, Mr. W. Jesse mentions incidentally his having seen, among other birds on the Ganges near Fatehgarh, early in April last, a flock of more than 40 Swans. I thought there must be some mistake, and on mentioning the matter to one of the Editors, a careful inspection of the MS. was made; when, as I am informed, it appeared by the use of a magnifier that the word was "Sarus" (*Grus antigone*), but without any qualifying word "Crane."

On p. 9 Mr. Jesse says, "I have seen the 4th vol. of the 'Birds of India and Burma,' and notice that no native name is given to the Terns." I am not acquainted with any work bearing the title quoted; but if, as is probable, Mr. Jesse is referring to the 4th vol. of "Birds" in the 'Fauna of British India,' he must have overlooked the list of Indian Tern names on p. 306. The first name there mentioned, "Tehari," is sufficiently like "Titri," which, Mr. Jesse says, is used for Terns by the boatmen of Oudh and the N.W. Provinces, to make it not unlikely that the one is a local form of the other. The word is printed "Tehari" in Jerdon's 'Birds,' "Tihári" in Blyth's Catalogue, p. 290; one of these might be a misprint, but it is improbable that both are. "Pancheera," the term quoted for the Skimmer (*Rhynchops*) by Mr. Jesse, will be found in the 'Birds,' vol. iv. p. 327, and has been noticed by many writers, including Blyth and Jerdon, and also Reid in his "Birds of the Lucknow Division" ('Stray Feathers,' x. p. 86); the last-named writer, unfortunately, does not give any native name for ordinary Terns.

Yours &c.,

W. T. Blanford.

Sirs,—On one of the first days of January of the year 1898 a specimen of the Little Bunting (*Emberiza pusilla*) was taken by a bird-catcher in the neighbourhood of the Hague and sold to the Zoological Gardens there. Through the kindness of the directors of that institution the specimen, which is still in excellent health and condition, came into my possession two weeks ago, and is now living in one of my aviaries.

The bird being in winter plumage, I am not quite sure about the sex, but I suppose it is a male. This is the sixth recorded occurrence of the Little Bunting in the Netherlands.

Yours &c.,
F. E. Blaauw.

Gooilust, 's Graveland,
February 3rd, 1899.

Sirs,—At the suggestion of Dr. Blanford, made to me some time back, I have examined the type of *Euplocamus andersoni* of Elliot, contained in this museum, and have compared it with the plate in Elliot's 'Pheasants.' This specimen is, I find, accurately delineated in the plate; but it is to be observed that in both original and portrait the white rump-fringes, though visible, are not so conspicuous as to strongly affect the coloration of that part of the plumage. Mr. Elliot's second description, therefore, so far from being more accurate than the first, as Mr. Oates, in his admirable little work on the Game-Birds of India, reasonably supposes, is in this respect somewhat misleading.

Yours &c.,
Frank Finn.

Indian Museum, Calcutta,
February 11th, 1899.

The Paradise-birds in the Dresden Museum.—In our account of the great demonstration of Paradise-birds held at Dresden on the occasion of the Meeting of the German Ornithological Society at that city in May 1897, as given in our last number (above, page 138), we regret that (on line 23) the words "Leyden Museum" were inadvertently given instead of "Dresden Museum." The latter, as Dr. Meyer showed upon that occasion (*cf.* Abhandlungen zool. Mus. zu Dresden, vol. vii. no. 2, p. 39), contains a remarkably fine series of Paradise-birds, consisting at that date of 368 specimens, to which no doubt many additions have been since made.

XXV.—*Obituary.*

The Rev. Alfred Charles Smith, M.A., who died on the 7th of December last, was one of the fourteen recipients of the honour of Membership of the British Ornithologists' Union in 1864–65, when the number was raised from twenty to thirty-four Ordinary Members. At that time he was Rector of Yatesbury, Wilts. His first important contribution to 'The Ibis' seems to have been "A Sketch of the Birds of Portugal" (1868, pp. 428–460), the first compendious account of the avifauna of the western portion of the Peninsula, a region which differs widely from Spain in its natural features. The list was reprinted, with additions by Prof. Barboza du Bocage, in Mr. Smith's 'Narrative of a Spring Tour in Portugal,' a very pleasantly-written book; as were, indeed, all Mr. Smith's blends of travel, archæology, and natural history. This agreeable mixture was especially noticeable in his principal work, 'The Birds of Wiltshire,' published in 1887, and noticed in our volume for 1888 (p. 370). His writings were not always severely scientific, but they were very readable, and all who knew Mr. Smith will regret the disappearance of one of the good old school of genial naturalists.

THE IBIS.

SEVENTH SERIES.

No. XIX. JULY 1899.

XXVI.—*On a Hybrid between a male Guinea-fowl and a female Domestic Fowl, with some Observations on the Osteology of the* Numididæ. By Frank E. Beddard, M.A., F.R.S.

Some time since Mr. Sclater received as a present from Dr. Goeldi, C.M.Z.S., of Pará, a living example of a hybrid between the two gallinaceous birds mentioned in the title of this communication. It was stated to have been obtained from Ceará, Brazil, where, it is said, such hybrids are often bred and are known by the name of *Tahý*. After some weeks the bird was killed and a stuffed skin made of it. The body, *minus* the skull, the wings, and the distal part of the hind wing (which were left in the skin), Mr. Sclater has kindly allowed me to examine and study.

It was remarked * of the living bird that it presented the general appearance of a Fowl with traces of the casque and wattles of the other parent. I may add, from an examination of the stuffed skin, that the hybrid presented a further likeness to *Gallus* by reason of the absence of the spurs—the bird being, as determined by myself, a male. The general appearance was undoubtedly that of a Fowl; there were, for instance, no observable traces of the peculiar plumage of *Numida*. But the voice, when it cried out, was unmistakably like that of a Guinea-fowl.

There are not wanting accounts of hybrids between these two genera; and since, so far as I am aware, the only species of Guinea-fowl which is likely to be in a position to pair with the Common Fowl is *Numida meleagris,* the following observations apply to that species.

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* See P. Z. S. 1898, p. 348.

In 1865 the late Dr. v. Willemöes-Suhm* described, but only as regards external characters, a hybrid between these two birds. Later, M. Trutat † directed attention to a similar cross, figuring the bird itself and a few feathers.

Another case is recorded by M. Malafosse in the same publication as that which contains the last-quoted note (in the vol. for 1873–74).

In 1877 M. Barac again called attention to the subject ‡, dealing, however, as did the last-quoted observers, entirely with external characters and habits; in this communication is to be found a useful bibliography of the subject of hybrids between the two birds.

So far as I am aware, all these papers deal with external characters only, and the general result appears to be that the hybrids are intermediate in their appearance between their two parents.

I am also quite in harmony with these observers; the skeleton and the windpipe, which I have myself examined, are perfectly intermediate in their characters between those of *Numida* on the one hand and *Gallus* on the other.

But, in order to indicate the features in which the hybrid is intermediate, it will be necessary to compare with each other the two genera *Gallus* and *Numida*. This has been already done as regards certain points by Huxley §. I will attempt, however, in the following pages a somewhat more detailed comparison than is to be found in his memoir cited below. I shall take the various regions of the skeleton singly and in order. I commence with

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* "Ein Bastard von *Numida meleagris* und *Gallus domesticus cochinchinensis*," J. f. O. 1865, p. 433.

† Bull. Soc. d'Hist. Nat. Toulouse, x. (1875).

‡ "Bastarde von Haushahn und Perlhenne," Mitth. orn. Ver. Wien, 1877, pp. 35, 43.

§ "On the Classification and Distribution of the Alectoromorphæ and Heteromorphæ," P. Z. S. 1868, p. 294.

§ *The Vertebral Column.*

Both *Numida* and *Gallus* possess 16 cervical vertebræ, and in both the 16th is fused with the three following dorsals. The only differences that were apparent to me in the vertebral column concern the sacrals and the free caudals.

In *Numida* there are two vertebræ which may be termed sacral, and which possess stout and subequal transverse processes supporting the ilia. The two vertebræ in question are the third and fourth after that which bears the last free rib. In *Gallus,* on the other hand, there is only one vertebra in this region with specially strongly developed transverse processes; this one corresponds to the first of the two in *Numida*: *i. e.,* it is the third after that which bears the last free rib. There follow in *Numida* 12 vertebræ closely attached to the pelvis, and six free caudals exclusive of the compound "ploughshare"-bone *. I should remark, however, that in *Numida meleagris* the last of these is only partially free; it is almost fused with the ploughshare-bone. In *Gallus* there are 11 vertebræ attached to the pelvis and to each other, followed by only five free caudals, in addition, of course, to the ploughshare-bone.

§ *The Skull.*

There are two obvious points which distinguish the skull of *Gallus* from that of *Numida.* In *Gallus* there are both a large postfrontal and a large squamosal process; these two unite at their extremities. In *Numida* there is an equally well-developed postfrontal process, but no squamosal process at all.

The nasal processes of the premaxillæ in *Gallus* are comparatively broad, and do not extend so far back upon the forehead as do the much narrower processes of certain species of *Numida.* In addition to these two points it may be remarked that the skull is wider between the orbits in *Numida*, and that the bony nostrils in that genus are longer than in *Gallus*. These observations, however, apply to the section *Guttera*. In *Numida* proper (see p. 341) the conditions are more like *Gallus*.

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* The difference shown in the two genera in the number of the free caudals is not, however, universal; for in a skeleton of *N. vulturina* I have found, as in *Gallus,* only five free vertebræ, the last being fused with the pygostyle.

§ *The Pelvis.*

As Prof. Huxley has pointed out, "the posterior angles of the ilia are produced beyond the level of the last sacral vertebra" in *Gallus*. In one of the specimens which I have examined they extend as far back as to the level of the third free caudal; in the other only to the second. *Numida*, on the other hand, has a decidedly truncated posterior margin, which in the species *N. cristata* and *N. eduardi* is very Tetraonine in appearance. In *N. meleagris*, *N. vulturina*, and *N. ptilorhyncha* * the posterior margin of the ilia are not by any means so broad and truncated, and thus present a closer resemblance to the pelvis of *Gallus*, though the processes of the two bones are not nearly so prominent.

The prepubic process of *Numida* is by no means so long as is that of *Gallus*; in *Gallus*, moreover, there is a long bony junction between the pubis and the ischium, which is wanting in *Numida*. Finally, the obturator foramen seems to be constantly more extensive in *Numida*.

§ *The Sternum.*

The sternum of *Numida* (fig. 1, p. 337) differs from that of *Gallus* (fig. 2) in a considerable number of small points. As was mentioned by Prof. Huxley, *Numida* is characterized by "the obtuseness and somewhat outward inclination of the costal processes" (="anterior lateral processes" of more recent nomenclature). I may add to this that the processes in question are generally broader in *Numida* (not, however, in a young example of *N. meleagris* which I studied), and, when the sternum is viewed laterally, are seen to lie nearly at right angles with its long axis. In *Gallus* the processes are narrower and lie almost parallel with the coracoids; they are also somewhat hooked at the free end. In *Gallus* the posterior lateral processes consist of two divergent pieces of bone—also known respectively as the external and internal xiphoid processes—which spring from the sternum by a common narrow bar of bone. The arrangement characteristic of *Numida*, as will be seen from the accompanying figure

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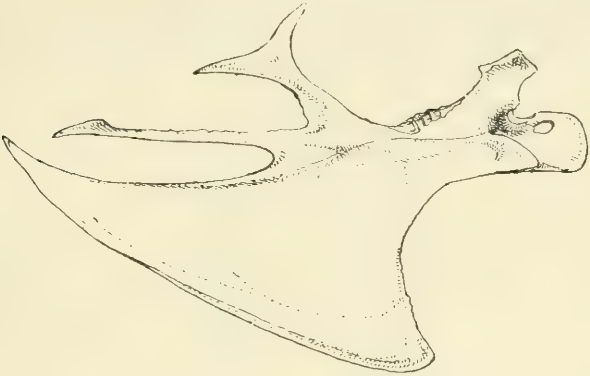
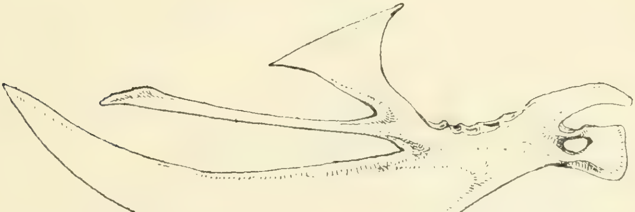
* For complete skeletons of these three species I am indebted to Mr. E. Gerrard, who kindly allowed me the use of them.

Fig. 1.



Sternum of *Numida vulturina*.
(Lateral view, ⅔ nat. size.)

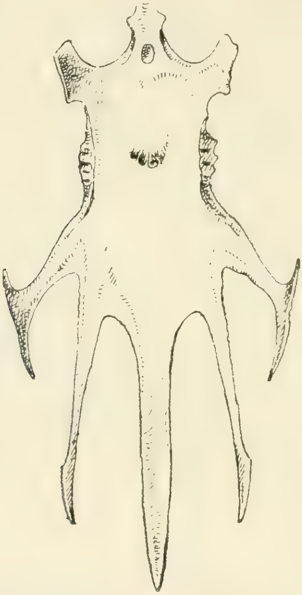
Fig. 2.



Sternum of *Gallus bankiva*.
(Lateral view, ⅔ nat. size.)

(fig. 3), is a little different, and nearer to that of the Peristeropodes. There is no narrow neck (with an exception which will be noted immediately) uniting the two portions of the posterior lateral process; they seem, as it were, to arise separately from the body of the sternum. The Guinea-fowl's sternum is thus broader in this region than that of *Gallus*. But I should remark that one of the two examples of *Numida meleagris* which I studied (a young hen) presented a sternum which in the particular just mentioned was precisely like that of a Common Fowl. This, however, was probably due to incomplete ossification, which might, later, have broadened the "neck."

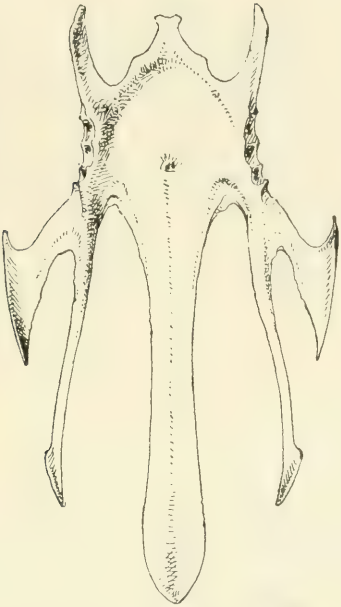
Fig. 3.



Sternum of *Numida vulturina*.
(Dorsal aspect, $\frac{2}{3}$ nat. size.)

The form of the carina sterni differs among the Guinea-fowls: in *N. cristata* and *N. eduardi* (which are sometimes spoken of as the genus *Guttera*) the anterior margin is much more cut away than in the remaining species, to make room for the swollen extremity of the furcula, which lodges a loop of the windpipe; but in all Guinea-fowls the carina seems to be deeper than in *Gallus* (see figs. 1, 2, p. 337). In gallinaceous birds generally, as is well known, the spina externa and the spina interna sterni unite to form a broad, or rather deep, plate of bone in which the sternum ends anteriorly. This is perforated below by a foramen, through which pass the inner edges of the coracoids. The form of the manubrium differs in different Guinea-fowls: in the two species which are referred to the genus *Guttera* the manubrium is longer and with a more sinuous outline, ending in front in a more pointed extremity. In *N. meleagris*, *N. vulturina* (fig. 1, p. 337), *N. mitrata*, and *N. ptilorhyncha* it is shorter and squarer; and, moreover, the upper face of its base is perforated by a conspicuous pneumatic foramen, which latter is

Fig. 4.



Sternum of *Gallus bankiva*.
(Dorsal aspect, $\frac{2}{3}$ nat. size.)

wanting in *N. cristata* and in its immediate ally, *N. eduardi*. Except for the absence of this foramen the manubrium sterni of *Gallus* comes nearest to that of *N. vulturina*, &c. Another feature which seems to distinguish the sternum of *Gallus* from that of *Numida* is in the attachment of the sternal ribs. In all the species of *Numida* that I have examined, which comprise all those mentioned in the course of this paper (with the exception of *N. meleagris*), there are, as in *Gallus*, four sternal ribs with attachments to the sternum. Of these the last three are crowded together, the first rib being at some little distance in front of this group of three. In *Gallus*, on the other hand, there is a progressive diminution in the distances between the sternal articular surfaces of the ribs from before backward.

A final characteristic which differentiates the sterna of *Gallus* and *Numida* is the breadth of the anterior region, which is much wider in *Gallus*. The following measurements are taken at the insertion of the second pair of ribs:—

	Length. millim.	Breadth. millim.
Gallus bankiva	117	35
,, ,,	112	33
Numida mitrata	115	25
,, *vulturina**	108	28
,, *cristata*	121	27
,, *eduardi*	130	28
,, *meleagris*	113	25
,, *ptilorhyncha*	105	25

§ *The Scapula and the Clavicle.*

Prof. Huxley has directed attention to the fact that the acromion is recurved in a hook-like fashion in *Numida*, and that it is not in *Gallus*. The existence in *Numida cristata* and *N. eduardi* of a hollow enlargement of the conjoined ends of the clavicles is well known. This, of course, does not exist in *Gallus*. I may point out that in those species of *Numida* with an inflated box the two clavicles are disposed in a direction more parallel to each other, and are not bowed outward in an U-shaped fashion as they are in *N. mitrata* &c. *Gallus* is naturally more like the latter in this feature.

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* Slightly distorted at the extremity.

§ *The Fore Limb.*

The only detectable difference of note has already been pointed out by Prof. Huxley. This is the absence in *Numida* of a backward process of the second metacarpal. It is to be found in *Gallus* as in Gallinaceous birds generally.

It may be convenient, perhaps, before proceeding to consider the osteology of the hybrid Guinea-fowl, to abstract from the foregoing a tabular statement of the differences between the species of the genus *Numida*, which allow it to be divided, at any rate, into subgenera. The characters of *Numida* proper and *Guttera* will be then as follows :—

GUTTERA (including the species *cristata*, *eduardi*, *pucherani**) : —

Trachea convoluted in both sexes and received into a bony dilatation of the clavicular symphysis.

Sternum without pneumatic foramen at base of manubrium, the carina much cut away anteriorly.

Ilia squarely truncated behind.

Nasal processes of premaxillæ very long.

NUMIDA (including the species *vulturina*, *mitrata*, *ptilorhyncha*, *meleagris*) :—

No convoluted trachea or bony box upon the clavicles.

Sternum with pneumatic foramen at base of manubrium, the carina not much cut away anteriorly.

Ilia with slightly developed posterior processes.

Nasal processes of premaxillæ not so long as in *Guttera*.

§ *Osteology of the Hybrid.*

Unfortunately, as already stated, several important regions of the hybrid were wanting, so that my comparisons are not so complete as I could wish. In the vertebral column the only diagnostic feature which I was able to observe concerns the sacral vertebræ. Here, as in *Numida*, the third and fourth vertebræ after that bearing the last rib were

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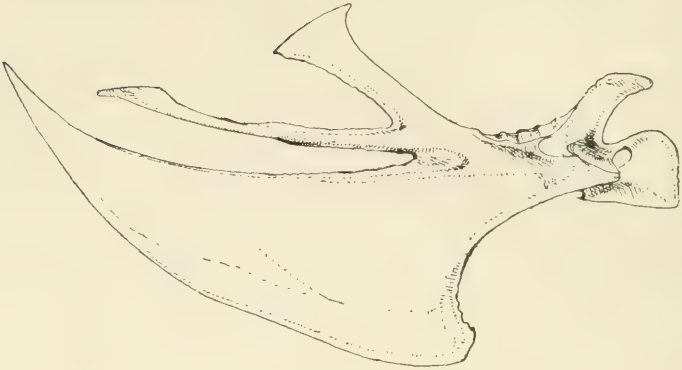
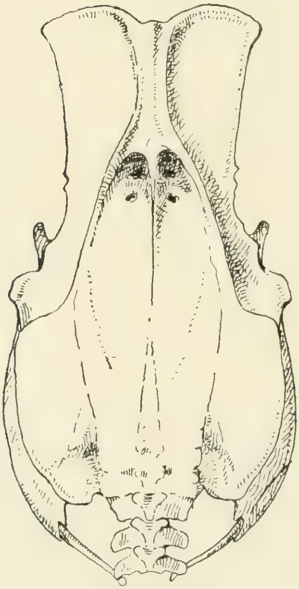
* *Cf.* W. A. Forbes, P. Z. S. 1882, p. 347.

Fig. 5.



Sternum of Hybrid Guinea-fowl.
(Lateral view, $\frac{2}{3}$ nat. size.)

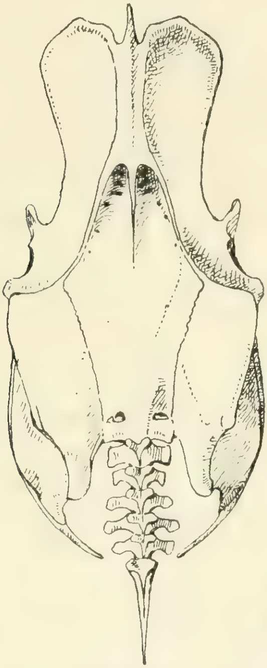
Fig. 6.



Pelvis of Hybrid Guinea-fowl.
(Dorsal aspect, $\frac{2}{3}$ nat. size.)

equally and strongly developed for the support of the ilia. The vertebral column, however, of this bird showed a feature which I have not observed in any examples of either of the species between which it is a hybrid. There were five instead of only four fused vertebræ in the dorsal region, and an additional rudimentary rib (without an uncinate process) on the free vertebra in front of these. There were thus 8 pairs of ribs instead of 7.

Fig. 7.



Pelvis of *Gallus bankiva*.
(Dorsal aspect, $\frac{2}{3}$ nat. size.)

The sternum (fig. 5, p. 342) is intermediate in its characters. The anterior lateral processes are broader than those of *Gallus*, but not so broad as those of *Numida*. They also tend to run parallel to the coracoids, but not to so marked an extent as in *Gallus*, nor are they so long as in that genus.

There is, as in *N. meleagris*, &c., a foramen on the upper surface of the manubrium sterni. The posterior lateral processes are again intermediate; the neck uniting the two branches of the process to the body of the sternum is wider than in *Gallus*, but not so wide as in *Numida*. The depth of the keel is suggestive of *Numida*, but its form is more like that of *Gallus*. The mode of attachment of the ribs is like that of *Gallus*; but, as already explained, *Numida meleagris* alone of the genus *Numida* also agrees with *Gallus*.

In the scapula the hook-like process of the acromion is not quite so patent as it is in *Numida*.

The pelvis (fig. 6, p. 342) is on the whole like that of *Numida*. The prepubic processes are small, and the backward projection of the ilia but little marked; there is, however,—and this is a resemblance to *Gallus* (fig. 7, p. 343)—a considerable attachment between the pubis and the ischium.

In addition to the osteology of the hybrid, I have examined the syrinx. The syrinxes of both *Gallus* and *Numida* have been described and figured by Garrod in his well-known paper upon the trachea in the Gallinaceous birds *. I need not recapitulate his descriptions, as they are accessible to every one; I may state that the syrinx of the hybrid was quite intermediate in its characters. There was a complete bony bar below, uniting the extremities of the last rings before the bifurcation; but, as in *Gallus* and *not* as in *Numida*, there were no lateral gaps between the few last tracheal rings.

XXVII.—*Birds'-nesting in and around Lucknow.*—No. III. †

By William Jesse.

After an unsuccessful season in 1897, owing to illness, 1898 made amends to me for previous disappointments, inasmuch as I found the nests and took the eggs of some 26 species new to me. Many of these are of course really common, and, as they had been brought to me often before and have been recorded in my previous papers, there is no need to go into further details. Among them are the Shikra (*Astur badius*); Striated Bush-Babbler (*Argya caudata*); Indian White-eye (*Zosterops palpebrosa*); Tailor-bird (*Orthotomus sutorius*); Rufous Fantail-Warbler (*Cisticola cursitans*); Black-headed Myna (*Temenuchus pagodarum*); Brown Rock-Chat (*Cercomela fusca*); and the Indian Pied Kingfisher (*Ceryle varia*). Of certain other species, of which I had previously only a single egg or so, I managed to obtain one or more good clutches, as Pallas's Fishing-Eagle (*Haliaëtus leucoryphus*); the Magpie-Robin (*Copsychus saularis*); the Thick-billed Flowerpecker (*Piprisoma agile*); the Yellow-wattled Plover (*Sarciophorus bilobus*); and the Wire-tailed Swallow (*Hirundo smithii*).

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* P. Z. S. 1879, p. 354.

† For previous papers on the same subject see Ibis, 1896, p. 185, and 1897, p. 554.

I also discovered a breeding-place of the Whiskered Tern (*Hydrochelidon hybrida*); but, as I was prevented by fever from going out on the day I intended to take the eggs, I must leave the description of the colony for some future time.

All the eggs enumerated in this paper were taken in Oudh—nearly all within 10 miles of the city of Lucknow; but besides this I spent a few days at Fatehgarh, on the Ganges—where that river forms the boundary between the North-west Provinces and Oudh—in order that I might procure eggs of the Terns and Plovers. An account of this trip has already appeared in 'The Ibis' (above, p. 4).

Of course I cannot lay claim to have found out much that was previously unknown: a limited area of an already well-worked district does not leave much scope; still I think there are a few facts of interest which have not been previously recorded. In the first place, I have taken with my own hands authentic eggs of the Brahminy Kite (*Haliastur indus*), a bird which usually keeps to the moister districts of Bengal and the Terai, and of the Black-headed Cuckoo-Shrike (*Campophaga sykesi*), which species I do not think has been previously recorded from these parts. I have also found that the Yellow-wattled Plover (*Sarciophorus bilobus*) breeds later in the year than is commonly supposed, having taken eggs this year on June 3rd and July 17th.

Among the various species which I found breeding this year, besides those mentioned, the eggs of the following have not been previously recorded from the Lucknow District itself:—Indian Pipit (*Anthus rufulus*); Crested Lark (*Galerita cristata*); Bronze-winged Jacana (*Metopidius indicus*); and Blue Heron (*Ardea cinerea*).

Of course I do not pretend for a moment that there is anything out of the way in taking the eggs of these birds; only, as I cannot find any note to the effect that others have met with them in this particular district, I think it worth while to mention it.

Having thus prefaced my remarks, I will give some notes on the more interesting species, eggs of which I have taken during the past twelve months.

HALIASTUR INDUS. Brahminy Kite.

Hind. [*Lucknow*]: Maochli-Khata.

Though this bird was known to breed in the "Division," I could find no authentic record of its nest being taken here. Reid, in 'Stray Feathers,' says that he had had the eggs brought him in March, but does not give any further particulars. I was therefore much interested when I received information which led me on April 16th to a nest that had been found. It was situated about three-quarters way up a mango-tree. One bird was seated on it, the other standing by its side. The nest contained one chick and one stale egg, which was brought down in triumph. All the time that I was near the old birds flew round in evident agitation, quite close to my head; but I did not shoot them, as I was leaving the young one, and, moreover, the maroon-coloured body with white head and shoulders cannot be mistaken. The nest was a small platform of sticks, lined with mud, with which the egg, originally an unspotted greyish white, was covered.

DENDROCITTA RUFA. Indian Tree-pie.

Hind. [*Lucknow*]: Mootri.

This very common bird lays eggs, as many of the Passerine birds do, of two distinct types: (*a*) pink or white ground with reddish-brown and russet spots; (*b*) greenish ground with greenish and yellowish-brown markings; but on April 4th I took three eggs from a tree in my own compound which were of a pale yellowish green, *absolutely unspotted.* I had continually watched the bird on this nest for some days and had seen her fly off when the eggs were taken, or I should have had my doubts as to their parentage. This clutch has now given me a regular series, showing all the various shades of colour and markings that the eggs of this Tree-pie possess.

PYCTORHIS SINENSIS. Yellow-eyed Babbler.

On July 29th Mr. Sutton Davies, of the East Lancashire Regiment, and I found five hard-set eggs of this bird.

As I did not think that these eggs had been previously recorded from Lucknow, I was very anxious to get the bird, but though we waited till it was dark, and continually caught glimpses of her, we could never get a shot in the dense jungle. I do not think, however, that there can be any reasonable doubt as to the parentage of these eggs, as, apart from the short glimpses which we caught of the bird, there is, to my knowledge, no other species in this part of India to which the nest and eggs could have belonged. The former was a deep inverted cone lined inside with grass and plastered outside with spiders' webs, and the whole structure was firmly fastened to the long stalk of patowal grass. The eggs were most lovely, being of a pinkish-white ground thickly blotched with various shades of blood-red and carmine.

COPSYCHUS SAULARIS. Magpie-Robin.

Hind. [*Lucknow*]: Dayat.

This bird, which about here generally breeds in June and July, usually lays four, sometimes five eggs, but on June 16th I found a hen bird sitting on a pile of no fewer than nine eggs. These were placed in the usual nest in a hole of a gula-tree some 20 feet from the ground, and while some were fresh, others were stale, two slightly set, and one almost dried up. Possibly they were the product of two hens; but, though I waited, I saw only one pair of birds.

Ægithina tiphia. Common Iora.

This species is much more often heard than seen, and is, consequently, frequently overlooked. Its nest is extremely difficult to find, and the only one that I have so far discovered was in a small fork of a mango-tree on June 17th. We had been watching the birds for some time, being attracted by their note, when suddenly the hen bird came down and deliberately sat on the eggs within about 10 feet of us. The nest was a deep cup, something like that of *Rhipidura albifrontata*, but not quite so neat. It contained two eggs of a delicate pinkish white, marked with long brown and violet-grey streaks and blotches. I left the birds alone in the hope of getting more eggs; but, although I often saw them afterwards, they did not apparently breed again.

Graucalus macei. Large Cuckoo-Shrike.

Though two years ago I found this bird's nest, I had never got the eggs. The bird itself is almost common, but the nest is one of the most difficult to find, being most carefully concealed, and the owners exceedingly shy. However, on June 12th, while walking along one of the principal roads in Lucknow, a Cuckoo-Shrike flew off a nest in the fork of a sheshum-tree, containing two fresh eggs. They were a most handsome pair, very glossy, of a rich olive, thickly marked and blotched with various shades of brown. A similar egg, said to belong to this species, was brought me on March 21st.

Campophaga sykesi. Black-headed Cuckoo-Shrike.

I can find no previous record of this bird having been observed in Lucknow, and was therefore much interested in finding on June 10th a nest and two fresh eggs and shooting one of the parents. The nest was a very shallow pad, like that of *Graucalus macei*, so shallow that the eggs were unfortunately shaken out in climbing the tree and broken; but a third, previously taken from the same nest, was given me. This egg, and the fragments of the two others, were of a rich deep green thickly blotched with brown. The bird is excessively shy, but its beautiful note once heard betrays it, and, though it is not common, I met with more pairs than one. Moreover, two boys brought me eggs which, both from their appearance and from their descriptions of the bird and nest, were evidently of this species.

RHIPHIDURA ALBIFRONTATA. White-eyebrowed Fantail Flycatcher.

Though this is a common bird in the mango-topes near Lucknow, its nest is hard to find, unless you are well acquainted with its habits. As I had never got its eggs, I determined to give up some time purposely to this object and was successful in discovering the following nests:—

June 11. Three nests (nearly finished), two on mango-trees, the third on a guava.
„ 17. Took 3 and 2 eggs respectively from the first two nests; the third had been broken down by a storm. Found another nest with three young ones.
„ 25. Two eggs from a nest high up on a mango-tree, and found another nearly ready.

All the nests were most delicate little cups, firmly fixed on to horizontal branches, the outside carefully covered over with cobwebs. The eggs were a yellowish white with a ring of brown and yellow spots, and much resembled miniature Shrikes' eggs.

ANTHUS RUFULUS. Indian Pipit.

I shot a male bird off three fresh eggs on March 31st. The nest was a neat little cup, placed in the centre of a tuft of patowal grass. The female laid a fourth egg next day in the hollow left after taking the nest, a structure so loosely put together that it fell to pieces almost immediately it was taken.

MIRAFRA ERYTHROPTERA. Red-winged Bush-Lark.

In 1896 I found a nest, which, after comparison with Hume's notes, I came to the conclusion must belong to *M. cantillans*. Since then I have shot and watched several of these Bush-Larks, and they have all proved to be *M. erythro-*

ptera; in fact, if *M. cantillans* occurs in the district, it can only be very local. This year I flushed undoubted *M. erythroptera* off two nests, April 1st (2 fresh eggs), April 5th (2 hard-set eggs), and various other nests were found by the boys. All the nests were on the ground, well concealed by grass, and domed; except in one instance, they contained two eggs only.

GALERITA CRISTATA. Crested Lark.

On March 30th I took three fresh eggs from a nest carefully concealed under a tuft of patowal grass. We had great difficulty in finding the nest, which was a deep cup of fine dry grass, so loosely put together that it fell to pieces on removal. I shot one of the birds as it rose from the nest. The eggs before being emptied were of a faint pinkish, speckled and stippled all over with light brown.

ARACHNECTHRA ASIATICA. Purple Sun-bird.

It is probable that the normal complement of eggs of this bird does not exceed two, but on March 31st a clutch of three fresh eggs was brought me; on April 5th I took another containing the same number with my own hand; and on April 15th two more similar clutches were brought. The nest that I found had evidently not been tampered with, and the schoolboys who brought me the others had had no inducement to make them untruthful.

METOPIDIUS INDICUS. Bronze-winged Jacana.

On July 24th I shot both birds from a nest containing three fresh eggs. The nest, which was merely a slight pad formed by tearing up the weeds, was in about 5 feet of water and was so slight that the eggs themselves were half under water. Though Davies and I hunted carefully, we could not find any more nests. In fact, the majority of this species leave this part of the country after the cold weather, and breed, I fancy, in the moister districts of Bengal.

HYDROPHASIANUS CHIRURGUS. Pheasant-tailed Jacana.

I have taken the eggs of this bird in previous years, but among the many I have seen I have never met with spotted eggs. On July 30th, however, Davies and I took a nest on a big jheel containing three fresh eggs of a dullish yellow-green, faintly but distinctly stippled and speckled with dull light brown. Only two of the eggs were thus marked, the other being practically normal. I am curious to know whether any one else has come across eggs of this genus marked in any way. The eggs of this bird frequently perish from lying so much in water, in spite of the great gloss, which one would think would protect them.

ARDEA CINEREA. Common Heron.
Hind. [*Lucknow*] : Chanak.

On July 17th, in a perfect deluge of rain, I got two nests containing 4 (set) and 2 (fresh) eggs respectively. The nests were in a high pipal-tree, and beside them a pair of the Large White Egrets (*A. alba*) had a nest; but, owing to the rain, we could not get the men to climb the slippery branch on which it was placed.

NETTAPUS COROMANDELIANUS. Cotton-Teal.
Hind. [*Lucknow*] : Ghirria.

On July 30th Davies and I found a nest containing four broken and two whole fresh eggs. The two birds kept flying to and fro, uttering their cry of "Fix bayonets!" and it was by the female going to look at her treasures that I found them. The nest was a collection of bents and grass at the bottom of a great hole in a pipal-tree, just a little deeper than my arm could reach, and about 15 feet from the ground.

XXVIII.—*On some Remains of Birds from the Lake-dwellings of Glastonbury, Somersetshire.* By C. W. ANDREWS, B.Sc., F.Z.S.

IN 1892 Mr. Arthur Bulleid of Glastonbury discovered in the neighbourhood of that town the remains of an ancient lake-village, at that time only recognizable as a series of nearly obliterated mounds marking the sites of the houses.

This discovery was of the greatest interest to archæologists, and, thanks to the energetic action of Mr. Bulleid and others, extensive excavations have been carried out, resulting in the discovery of the remains of sixty or seventy dwellings, and of many utensils and ornaments of various kinds, as well as of bones of man and of numerous wild and domestic mammals and birds.

The various remains thus unearthed have been described in several journals*; and it is generally agreed that the village in question was a Celtic settlement dating from shortly before the Roman occupation.

A considerable number of the remains of mammals and birds have already been determined by Prof. Boyd Dawkins, F.R.S. Omitting the domestic forms, his list includes the following:—

MAMMALS.	BIRDS.
Felis catus ferus.	Crane.
Lutra vulgaris.	Swan.
Canis lupus.	Heron.
Sus scrofa ferus.	Diver.
Castor fiber.	Mallard.
Cervus elaphus.	Grebe.
—— *capreolus.*	
Arvicola amphibius.	

Some time ago I received from Mr. Bulleid for determination a quantity of bird-remains and a few mammal-bones which enable me to add several species to this list. One of the birds, *Pelecanus crispus*, is specially interesting because at the present day it does not occur in North-western Europe †.

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* See paper by Arthur Bulleid in Proceedings of the Somersetshire Archæological and Natural History Society, 1894, also an abstract of an address delivered by Prof. Boyd Dawkins at the Nottingham meeting of the British Association, 1893, printed in 'Natural Science,' vol. iii. (1893), p. 344. These and several other papers dealing with the subject have been reprinted in a pamphlet issued by the Glastonbury Antiquarian Society (published by Barnicott & Pearce, Taunton, 1896).

† [According to Mr. A. C. Chapman, the Pelican is still to be found wild in West Jutland. See Ibis, 1894, p. 348.—EDD.]

The present paper deals especially with the bird-remains, but a list of the mammals will be given at the end.

Pelecanus crispus Bruch.

The first account of the occurrence of the remains of a Pelican in England was given by Prof. A. Milne-Edwards in a paper published in 1867 *. In this he described in detail a left humerus preserved in the Woodwardian Museum, Cambridge, to which his attention had been drawn by Prof. Alfred Newton (P. Z. S. 1868, p. 2). He further pointed out that the bone belonged to a young bird, which probably had been bred in the Fens and was not a mere accidental visitor.

In 1871 a second specimen, curiously enough also a left humerus, from Feltwell Fen, Norfolk, was presented to the University Museum of Zoology by Mr. J. H. Gurney; this was described by Prof. Newton (P. Z. S. 1871, p. 702), who, on account of its large size, came to the conclusion that it belonged to the Crested Pelican (*P. crispus*), and not to the Common Pelican (*P. onocrotalus*).

Recently Mr. Sydney F. Harmer has described † some wing-bones from Burnt Fen, Littleport, near Ely, which seem to belong without doubt to *P. crispus*, and, as the author remarks, these together with the previously recorded specimens go far to prove that the Pelican was really a native of the Fen Country.

In the present collection Pelican bones are numerous, and portions of the skeletons of at least five individuals, but probably many more, occur. Many of the bones are greatly broken and the ends much abraded, and in several instances they must have belonged to young birds. This latter circumstance appears to indicate that these birds bred in the neighbourhood, and that they were probably used for food by the inhabitants of the village.

In determining the species to which these remains belong it will be necessary to compare them with *Pelecanus onocrotalus* and *P. crispus* only. The latter of these is the larger, and in the skeletons I have examined the bones of the wing are longer in proportion to those of the leg than in *P. onocrotalus*, in which the tibia and metatarsus are in some cases as long as those of *P. crispus*, while the wing-bones and femora are considerably shorter; even the tibia and metatarsus, however, can be distinguished, those of *P. onocrotalus* being somewhat the more slender.

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* Ann. Sci. Nat. (Zoologie), ser. v. vol. viii. (1867), p. 285.

† Trans. Norfolk & Norwich Naturalists' Society, vol. vi. (1898), p. 363; reprinted in Geol. Mag. dec. 4, vol. v. p. 417 (1898).

Among the specimens are a left humerus and left ulna, quite unbroken, and a right metacarpus wanting only a portion of the third metacarpal. These bones agree very closely with those of *P. crispus*, as is shown in the following table:—

	Glastonbury specimens.	*P. crispus.*	*P. onocrotalus.*
	mm.	mm.	mm.
Length of humerus	363	363	304
Width of distal end of humerus	52	53	47
Length of ulna	410	413	350
Length of metacarpus ..	176	178	145

Several specimens of the coracoid are preserved, and of these two specimens belonging to fully adult birds are smaller than the coracoids of *P. crispus* that I have measured, and are of about the same size as those of *P. onocrotalus*; they may, however, have belonged to a female of the former species. The other specimens, which are clearly immature, are slightly smaller than those of *P. crispus*.

	Glastonbury specimens.	*P. onocrotalus.*	*P. crispus.*
	mm.	mm.	mm.
Length of coracoid from inner inferior angle to top of acro-coracoid	120 122 127 128	122	131

In the dimensions of the bones of the hind limb the Glastonbury birds show a considerable range of variation, even allowing for differences of age; for instance, one metatarsus measures 12·5 cm. in length, while another, apparently fully adult, is only 10·9 cm. long; this latter may have belonged to a hen-bird. As already mentioned, the tibia and metatarsus of *P. onocrotalus* are almost of the same length as those of *P. crispus,* and in fact, in the two skeletons from which the measurements of the wing-bones given above are taken, the metatarsus of *P. onocrotalus* is actually the longer. At the same time, both it and the tibia are easily distinguishable, both from those of *P. crispus* and of the Glastonbury Pelicans, by their more slender build.

The lengths of the metatarsi in millimetres are given below :—

Glastonbury specimens (9).	*P. crispus.*	*P. onocrotalus.*
mm.	mm.	mm.
110		
122		
124		
124	126	128
124		
125		
125		
126		
127		

It will therefore be seen that so far as length is concerned there is no reason for regarding the fossil metatarsi as other than those of *P. crispus,* which they closely resemble in all respects.

Most of the tibiæ are those of young birds, but one adult specimen agrees very closely with a tibia of *P. crispus* with which it was compared, and in both bones the extensor bridge was incompletely ossified ; in another, rather smaller specimen from Glastonbury the bridge is complete.

	Glastonbury bird.	*P. crispus.*	*P. onocrotalus.*
	mm.	mm.	mm.
Length, exclusive of cnemial crest	186	187	183

The femur of *P. crispus,* like the wing-bones, is both longer and stouter than that of *P. onocrotalus.* Most of the fossil specimens are intermediate in size between the two, but nearer to *P. crispus.* One imperfect specimen seems to have been fully as large as the femur of *P. crispus.*

Length of femora :—

Glastonbury specimens.	*P. crispus.*	*P. onocrotalus.*
mm.	mm.	mm.
130	137	116
125		

Of the skull the only remains are the occipital regions of two specimens. Comparison of these with the skulls of the recent forms shows that in the greater degree of development of the supra-foraminal ridge, and of the mammillary processes, they approach most nearly to that of *P. crispus.* It must, however, be remarked that, in the absence of a considerable series of skulls of the different species, it is difficult to determine what may be mere individual variations and what specific differences.

In one of the specimens the cerebellar prominence is more marked than in *P. crispus,* approximately to that seen in *P. onocrotalus.*

The only other portions of the skeleton preserved are a few cervical vertebræ, more or less imperfect, and some pieces of the sternum.

From these facts there can be no doubt that *P. crispus* inhabited the West of England in considerable numbers, and that it not improbably bred there and was used for food by the people of the lake-dwellings.

According to Dresser*, this species now ranges through Southern and South-eastern Europe, Northern Africa, and Southern Asia as far as India. It has not been recorded from Great Britain, France, Spain, Portugal, or Italy, and is rare in Transylvania, though abundant on the Lower Danube; in North Germany a single occurrence is recorded.

In Southern Russia it is widely distributed, and in the spring passes northward in large flocks. In the breeding-season it occurs fairly far north in Russia, and specimens have been seen in the Government of Kasan and near Ekaterinburg, localities lying several degrees to the north of those in which the remains of this bird have been found in this country.

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* 'Birds of Europe,' vol. vi. p. 199.

Recently Dr. Herluf Winge has called my attention to a paper* in which he has recorded the occurrence of remains of *Pelecanus crispus* in kitchen-middens of the Stone Age at Havnoe, on the north side of the Mariager Fjord, on the eastern coast of Denmark. This discovery is particularly interesting, because it supplies a further proof that in former times the area of distribution of this bird extended much more widely in North-western Europe than at present †.

The other species of birds of which remains occur in this collection are:—

CORVUS CORONE L. Carrion-Crow.
Tibia, humerus, and metacarpus.

ASTUR PALUMBARIUS (L.). Goshawk.
Left tibia.

HALIAËTUS ALBICILLA (L.). White-tailed Sea-Eagle.
Left tibia. This is closely similar to the tibia from superficial deposits of Walthamstow, Essex, which has been referred by Lydekker to *H. pelagicus*.

MILVUS ICTINUS Sav. Kite.
Left tarso-metatarsus.

STRIX FLAMMEA L. Barn-Owl.
Two specimens of the tibio-tarsus.

PHALACROCORAX CARBO (L.). Cormorant.
Numerous bones.

ARDEA CINEREA L. Common Heron.
A portion of a skull.

BOTAURUS STELLARIS (L.). Common Bittern.
Right femur.

DUCKS (*Anatidæ*).

As might be expected in such a locality, by far the greater number of the remains belong to various Anserine birds.

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* "Fuglene ved de danske Fyr i 1894: 12te Aarsberetning om danske Fugle," Vidensk. Meddel. fra den naturh. Foren. i Kjöbenhavn, 1895, pp. 59–60.

† [See also, on this point, footnote, p. 352.—EDD.]

In many cases it is impossible to determine Ducks from isolated bones, and in the following list species about which there is any doubt are marked with a note of interrogation :—

Cygnus musicus.
Anser, sp. indet.
Anas boscas.
? Clangula glaucion.
Querquedula crecca.
? Dafila acuta.
? Spatula clypeata.
? Mareca penelope.
Fuligula cristata.
—— marila.
Mergus serrator.

PUFFINUS, sp. indet.
Humerus.

GRUS. Common Crane.
Skull (wanting only quadrates and bones of palate), mandible, and many limb-bones.

FULICA ATRA L.
Very numerous bones, including pelves and sterna.

CREX. Corn-Crake.
Left humerus and portion of right tibia.

TACHYBAPTES FLUVIATILIS (Tunst.). Little Grebe.
Right humerus.

This assemblage of species indicates the existence of a district of marsh and mere, haunted by flocks of Pelicans and Cranes, and in winter by swarms of wild fowl, which furnished the inhabitants of the pile-dwellings with food. Probably the birds were killed with the sling, for great quantities of pellets of clay, well adapted for use with that instrument, have been found. From time to time a stray sea-bird made its way to the spot, and the White-tailed Sea-Eagle, no doubt, found there a good hunting-ground.

The mammals cannot be noticed here in detail, but many of them likewise are aquatic. The collection includes remains of

Lutra vulgaris.
Mustela martes.
—— putorius.
Felis catus.
Castor fiber.
Arvicola amphibius.
—— agrestis.
Erinaceus europæus.

XXIX.—*Descriptions of some new Birds'-eggs from Northern Australia.* By D. LE SOUËF, C.M.Z.S.

1. GREAT BOWER-BIRD (*Chlamydodera nuchalis*): Cat. B. vi. p. 391.

Specimens of this bird were obtained at the Katherine River by Mr. E. Olive, who was collecting for Dr. C. Ryan, Dr. W. Snowball, and the writer. He was also fortunate in obtaining their nest and eggs, and saw one of their bowers. He obtained two males. They are easily recognizable from *C. orientalis*, the back being much more mottled, besides their larger size. In one of the specimens the feathers just in front of the nuchal ornament are tipped with white, forming an irregular white band, and several of the lilac-coloured feathers of the ornament are also tipped with white, especially at each end. Mr. Olive states that the females are more shy than the males. Their food consists of fruit and insects.

Their bowers are large, being formed of twigs and arched over at the top, and are from 2 to 3 feet long, the passage through being about 9 inches wide, and the width of the sides of the bower about 6 inches. At both ends were the usual collection of land-shells, pebbles, small bones, seeds, coloured feathers, &c. At one bower of these birds found on the Victoria River, N.W. Australia, and about 100 miles from the coast, were several turtle-bones. The birds were frequently rearranging the position of their collection. Three nests were found; each had a single egg in it, but the full clutch is probably two. The nests were built about 15 feet from the ground, on what is locally called an "ironwood"-tree in the open forest, and were situated near the end of the branch, one being in a bunch of mistletoe. They are open and lightly built of twigs, without any lining, and measure—external depth 5 inches, internal 2 inches; external diameter 8 inches, internal 4 inches. The eggs are very similar in appearance to those of *C. orientalis* and *C. maculata*, but not quite so handsomely marked. The one taken on December 18th, 1898, has the ground-colour of a very light shade of green, and is well marked all over with short, irregular, wavy lines and blotches of a greenish-brown tint in varying shades; many of these appear as if beneath the surface of the shell, being of a lilac-colour, and many of them are longer than the surface-markings. The shell is slightly glossy and elongate in form, and a little smaller at one end; it measures 1·78 by 1·16 inch. The three eggs taken vary in size and markings.

2. Crimson-winged Lory (*Ptistes coccineopterus* Gould): Cat. B. xx. p. 481.

Mr. Olive secured several of these beautiful birds, and also their eggs. They are similar in appearance to *P. erythropterus,* but are considerably smaller in all their measurements; some specimens of the latter I received from Cooktown average 12¾ inches in length, but the former 11½ inches. The green on the breast and the blue on the back of the *P. coccineopterus* is darker than in the *P. erythropterus,* and the amount of crimson on the wing considerably less. Their food consists of seeds and honey.

They nest in the hollow spouts of the eucalyptus-trees, the eggs being laid in the débris at the bottom, in one case 10 feet from the entrance. There were only two eggs in each of the three nests found, but the full complement is probably four; they are pure white when laid, but soon become stained; they are oval in form and measure:—(1) A. 1·18 by 1·1 inch, B. 1·21 by 1·1; (2) A. 1·14 by 0·96 inch, B. 1·10 by 0·98.

3. Red-collared Lorikeet (*Trichoglossus rubritorquis*): Cat. B. xx. p. 60.

These birds are very plentiful in the north-western coastal districts and are very noisy, flying generally in flocks, screeching as they go, and feeding on the honey of the various flowering trees and shrubs. They nest in the hollow spouts of the eucalyptus-trees at various distances from the entrance.

The eggs are elongate and slightly smaller at one end, and are of a dull white colour, but soon get stained brown.

December and January seem to be their principal nesting-season, and the two clutches herein described were found respectively on December 29th, 1898, and January 25th, 1899, and they measure:—(1) A. 1·4 by 0 82 inch, B. 1·8 by 0·84; (2) A. 1·6 by 0 82 inch, B. 1·2 by 0·83.

These eggs were exhibited before the Field Naturalists' Club of Victoria on March 13th, 1899.

4. BANDED HONEY-EATER (*Myzomela pectoralis*): Cat. B. ix. p. 138.

These little birds are fairly plentiful in Northern Australia, extending from the east coast right across to the western side. They are found principally in open forest-country, especially where the timber is small. I noticed a few of them about 30 miles inland from Cooktown, and they were generally seen in pairs and had a pleasing twittering note. Their nest was found on December 24th, 1898, but contained only one egg, which is probably not a full clutch. It was suspended between a fork near the end of a branch of an ironwood-tree, and is composed outwardly of a few vine-tendrils and fine strips of bark, kept together by cobwebs, and the same useful material is used to fasten the nest to the branch. The inside is lightly lined with fine pieces of grass. The structure is thin, and the eggs can easily be seen from below; it measures—internal depth 1 inch, external $1\frac{1}{4}$; internal diameter $1\frac{3}{4}$, external 2. The egg is a light reddish hue and with no gloss. It is darker on the larger end, where it forms an indistinct zone, with markings of a light reddish colour. It measures 0·66 by 0·48 inch.

5. MARBLED FROG-MOUTH (*Podargus marmoratus* Gould): Cat. B. xvi. p. 135.

This bird is the most beautifully marked of the Australian *Podargus* family and also the smallest. It is especially plentiful at Cape York, North Queensland, and I have also had specimens from some distance south of Cooktown. They build the usual flat stick-nest, $3\frac{1}{2}$ inches in diameter, generally on a horizontal bough, and the bird sits close and is very difficult to detect. A nest was found by

Mr. R. Hislop on August 12, 1898, and contained one egg, white in colour, slightly lustrous, the two ends being nearly of a uniform size. It measures 1·44 by 1 inch.

The eggs of all the Australian *Podargi* have now been described.

6. Chestnut-breasted Cuckoo (*Cacomantis castaneiventris*): Cat. B. xix. p. 274.

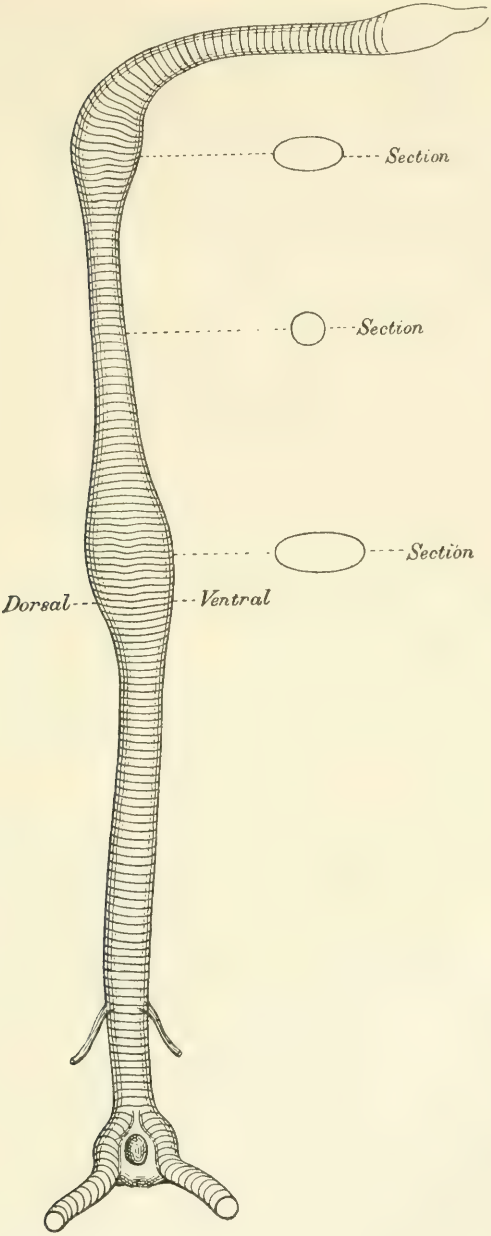
This bird I saw on many occasions on the Bloomfield River, near Cooktown, and often heard it uttering its mournful note during the night, and I have also noticed it flying about among the bushes, evidently hunting for nests, but I never saw or heard the Fan-tail Cuckoo (*C. flabelliformis*) in this district. Mr. R. Hislop has sent me a clutch of the eggs of the *Sericormis magnirostris,* in which was deposited the egg of a Cuckoo, which I have little doubt was laid by the *C. castaneiventris,* and which I provisionally describe as such until an opportunity shall occur of seeing the young bird that is hatched from these eggs. The ground-colour is white, with minute freckles of a brownish tint, rather sparsely scattered over the egg, and forming a light zone on the larger end. It is nearly oval in shape, and measures 0·82 by 0·58 inch.

The egg of the *Cacomantis variolosus* (the Square-tailed Cuckoo) has been found on several occasions in the Cooktown district, but always in the dome-shaped nest of the *Glycyphila modesta* (Brown-backed Honey-eater).

XXX.—*On the Trachea of the Freckled Duck of Australia* (Stictonetta nævosa). By A. J. Campbell.

Following a hint given me by Professor Newton, I obtained for Mr. J. J. Ed. Degen, of the Melbourne Museum, some specimens of *Stictonetta nævosa* (Cat. B. xxvii. p. 324) for dissection. I send herewith Mr. Degen's observations on the trachea of this remarkable species, of which the exact systematic position is still uncertain, together with a figure of that organ in the male:—

Trachea of the Freckled Duck of Australia.


Section
Section
Section
Dorsal
Ventral

Trachea of the Freckled Duck (*Stictonetta nævosa*, ♂).

"The sketch of the trachea belonging to a male of *Stictonetta nævosa,* which is appended [p. 363], shows that the bony labyrinth, which is asymmetrical in the Common Domestic Drake, is replaced by a slight swelling of the inferior larynx only in the present species, and that the trachea is, moreover, symmetrical.

"So far there is no difference as regards the two sexes. Where the male bird of *Stictonetta nævosa* differs from the female is in the two expansions occurring at irregular distances in the course of the trachea. The upper one is about equidistant from the pharynx proper and the second, while the lower one is placed somewhat higher from the inferior larynx than the first one is from the pharynx. These swellings, when the trachea is *in situ,* are 'compressed,' and accordingly, when viewed from the front, are not conspicuous. Viewed in the profile, however, these contours are plainly visible, as is shown in the sketches.

"The trachea of the female bird is more or less cylindrical throughout its entire length."

XXXI.—*On a Collection of Birds from the Tanganyika Plateau, in British Central Africa.* By Capt. G. E. Shelley, F.Z.S.

(Plates V. & VI.)

As I am kindly informed by Lt.-Col. W. H. Manning, H.B.M. Deputy Commissioner for British Central Africa, the present collection of birds was made during the months of July, August, and September last year by the hunters belonging to the Scientific Staff at Zomba, who were temporarily attached to the Commission for the Delimitation of the Anglo-German Boundary between Lakes Nyasa and Tanganyika. The Commission landed in July at Karonga, about 10° S. lat., and during its stay there some specimens were collected at Mpata, ten miles to the westward. The expedition then travelled due north to Fort Hill, on the Songwe River, which forms a portion of the Anglo-German boundary, and followed the Stevenson Road through the

Mamwe district to Fife, in about 9° 25′ S. lat., 32° 40′ E. long. Many of the specimens were collected at Ikawa, ten miles S.E. of Fife, and at Luchinde, halfway between Fife and Lake Nyasa.

The collection contains about 220 specimens, referable to 100 species. A complete set of them has been presented to the British Museum by Lt.-Col. Manning, and the duplicates will be sent to the South-African Museum, Capetown.

The collection contains examples of three new species:—

(1) *Malaconotus manningi* (p. 369), closely allied to *M. melamprosopus* (Reichen.).

(2) *Cisticola alticola* (p. 373), probably more nearly allied to *C. angusticauda* Reichen. than to any other known species.

(3) *Melanobucco macclounii* (p. 377), nearly allied to *M. levaillanti* (Vieill.).

Where no exact locality is stated it must be understood that the specimens are from some part of the Nyasa-Tanganyika plateau, which is fully described in Capt. E. R. F. Boileau's paper read before the Royal Geographical Society on April 24th, 1899, and published in the 'Geographical Journal,' vol. xiii.

The nomenclature and arrangement used in this list are those of Shelley's 'Birds of Africa.'

1. ANTHOTHREPTES ANCHIETÆ.

Fort Hill, on the Songwe river.

I was more pleased than surprised at seeing this species in the collection, for Mr. Guy A. K. Marshall wrote to me from Mashonaland, dated 3rd Jan., 1899:—"Since last writing I have obtained an example of what I take to be *Anthothreptes anchietæ* ♂, but unfortunately it has not acquired its full breeding-plumage. Out at Mazoe, at Christmas, I saw another in full plumage. I had a good look at it through the glasses, but could not secure it."

This species has previously been recorded only from Benguela, where it was discovered by Anchieta at Caconda, and where he informs us that it is common and known to the natives as "Kinjongo," a name I have also met with on one of his labels attached to a specimen of *Cinnyris oustaleti.*

2. Parus insignis.

Ikawa. Four adults.

This bird appears to be common in Nyasaland and to entirely replace *P. niger,* so I presume that the *P. niger* Reichen. Vög. Deutsch-Ost-Afr. p. 213, refers to this species. As this form was not generally well known, I gave a key to it and its near allies in a former article (Ibis, 1897, p. 526). Unfortunately the key was wrong as regards this species, for it should have been: *b'.* Larger; tail with a narrow white margin on each side . . . *P. insignis.* Apparently the range of this Tit is from the Cunene and Zambesi rivers northward into Angola on the west and the Usagua country on the east, and it is replaced south of the Cunene and Zambesi rivers by *P. niger,* while its nearest ally, *P. leucopterus,* ranges northward from Angola to Senegambia and through the Congo district, Uganda, Upper Nile, and Shoa into Abyssinia. *P. xanthostomus* is only known to me by three specimens: one from Grahamstown, a second obtained by Bradshaw south of the Zambesi, and a third from Mpimbe, in the Upper Shiré district.

3. Salpornis salvadorii.

Fort Hill and Ikawa. Four adults.

The genus *Salpornis* is represented by only two closely-allied species, the Indian *S. spilonotus* and the African bird.

Anchieta procured the type of *S. salvadorii* and several other specimens at Caconda in Benguela, and in the same neighbourhood Mr. Van der Kellen obtained a specimen on the Kasinga river. Messrs. Jameson and T. Ayres, during their journey through Mashonaland, met with it at the Ganyani river in September; and Mr. Guy A. K. Marshall secured a specimen in October near Salisbury, where it is known to the natives as "Mangwidso." In Nyasaland specimens have been collected at Zomba in August, at Fort Hill and Ikawa. The species is not recorded from German East Africa, but has been obtained by Mr. F. J. Jackson at Savé, on Mount Elgon, in February, at an elevation of 6000 feet, and Emin procured specimens on the Upper White Nile district at Tobbo, Langomeri, and Wadelai, its most northern known range being South Macrara (5° 4′ N. lat., 29° 31′ E. long.).

4. Anthus pyrrhonotus.

5. Emberiza orientalis.

Ikawa.

This species appears to be common and generally distributed over Nyasaland. It is now known to range from the Pangani district southwards into Mashonaland, whence there is a specimen in the British Museum. On the label of this specimen is written: "♂, 11.9.98, Hanyani river, 4500 ft., Mashonaland. Upper mandible black, lower one flesh-colour, blackish at the tip; legs dark flesh-colour; iris brown. In stomach, spiders and a caterpillar." This example was presented by Mr. Guy A. K. Marshall, who writes to me:—"*E. orientalis* would seem to be somewhat scarce here. I first observed it in May, when I came across a flock of about a dozen, but did not secure one, and the specimen sent is the only other that has come under my notice. It appears to seek its food entirely on the ground, in open bush, and is somewhat fearless in its habits, allowing one to approach within a few yards before rising, when it only flies for a short distance, settling again abruptly at the base of a small tree or bush; they seem to perch rarely, and then only on low shrubs."

6. Fringillaria tahapisi.

7. Passer diffusus.

8. Poliospiza reichardi.

Poliospiza reichardi Reichen. J. f. O. 1882, p. 209; id. Vög. Deutsch-Ost-Afr. p. 196 (1894) (Kakoma); Shelley, B. Afr. i. no. 274 (1896).

Poliospiza striatipectus Sharpe, Ibis, 1891, p. 258 (Elgeyo); Shelley, B. Afr. i. no. 276; id. Ibis, 1897, p. 528 (Nyika Plateau).

Ikawa.

Dr. R. B. Sharpe has informed me that his *P. striatipectus* is not distinct from *P. reichardi* Reichen.

9. Serinus icterus.

Two specimens.

10. Estrilda incana.

The little we know regarding the Natal Grey Waxbill is that it was discovered by Wahlberg in the Natal district. I found its nest at Durban, on the 8th March, placed in a creeper overhanging the footpath; and the Messrs. Woodward likewise found it breeding in Zululand in a small tree in the open country, and describe the nest as "very loosely made of grass, lined with fowls' feathers. It contained six very small white eggs." A specimen, evidently of this species, procured by Peters at Inhambane, has been made the type of *Habropyga poliogastra* Reichen. It is therefore interesting to find it next recorded from about 15° due north from Inhambane, in the Mambwe country, between the lakes of Nyasa and Tanganyika. Its plumage is delicate blue-grey, with the lower back crimson.

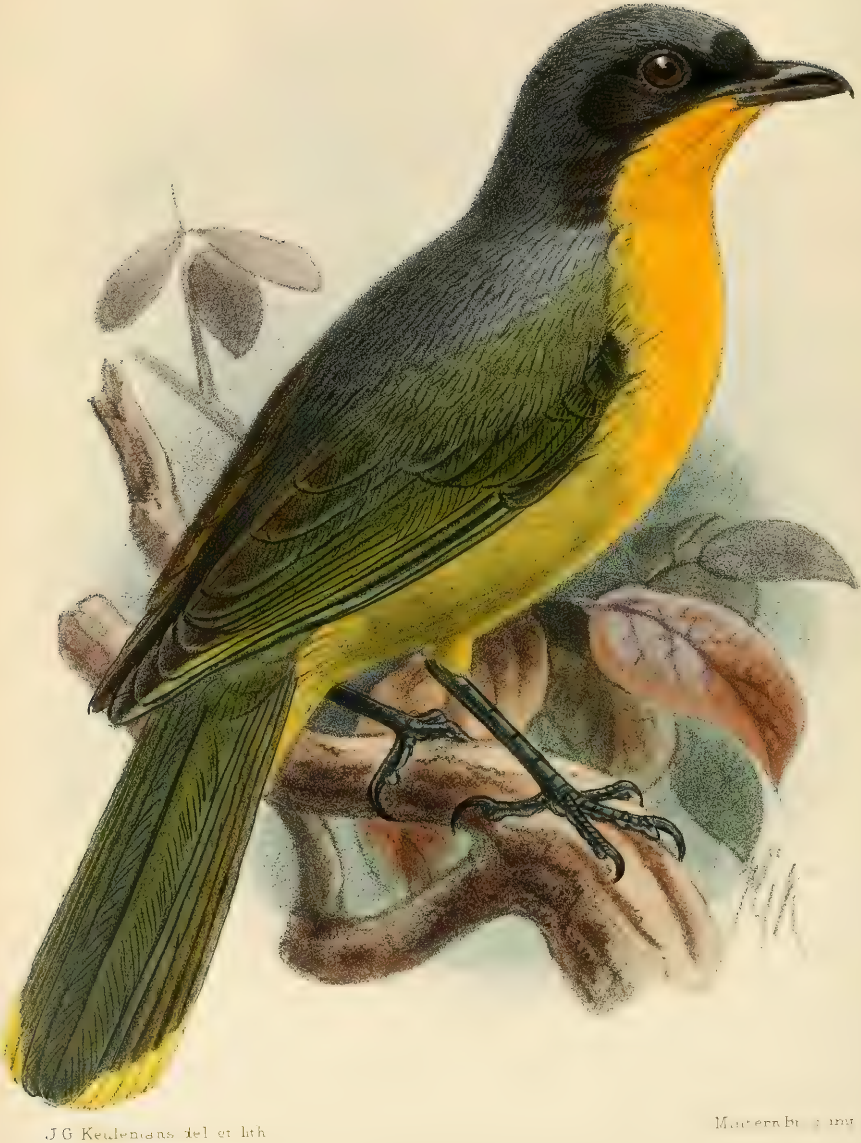
11. Anaplectes gurneyi.

As I first described this species from a specimen presented to me by Prof. Barboza du Bocage from Caconda, I am pleased to meet with it again from the Tanganyika Plateau to the north-west of Lake Nyasa, thus extending its known range eastward by about 20° of longitude.

12. Sycobrotus amaurocephalus.

This is the first specimen I have seen of this species, and it is new to the British Museum Collection. The type was procured by Schütt at Talla Magongo, in Angola; examples have also been procured by Bohndorff at Kibondo, on the Upper Congo, and southward by Anchieta at Quissange; and as Böhm found it near Lake Tanganyika, it is not surprising that it should be in the present collection from the Tanganyika Plateau. Its plumage is uniform brown above, rather darker on the head, and the lower throat and under surface of the body bright yellow. It is very well figured, J. f. O. 1880, pl. iii. fig. 1.

Ibis. 1899 Pl. V.



J.G. Keulemans del. et lith.

Mintern Bros. imp.

MALACONOTUS MANNINGI

13. XANTHOPHILUS XANTHOPS.

This and the following four species are common and generally distributed throughout Nyasaland. The specimens have no exact localities attached to them.

14. HYPHANTORNIS NIGRICEPS.

15. ORIOLUS NOTATUS.

16. ORIOLUS LARVATUS.

17. PHOLIDAUGES VERREAUXI.

18. GRAUCALUS PECTORALIS.

Fort Hill.

19. FISCUS SOUSÆ.

Fiscus sousæ Shelley, Ibis, 1897, p. 532 (Nyika Plateau).

This is the third specimen of this species that we have received from British Central Africa.

20. NILAUS NIGRITEMPORALIS.

This Shrike, and the three that follow, are common in Nyasaland.

21. LANIARIUS MOSAMBICUS.

Fife.

22. DRYOSCOPUS CUBLA.

Ikawa.

23. TELEPHONUS SENEGALUS.

24. TELEPHONUS MINOR.

Karonga.

This is the first record of the species from Nyasaland. The most southern and western range known for this species is Tête, on the Zambesi, where Sir John Kirk collected two specimens, which are now in the British Museum. Hence it ranges north to the Equator, where Mr. F. J. Jackson met with it at Elgeyo.

25. MALACONOTUS MANNINGI, sp. nov. (Plate V.)

Crown, back of neck, and upper back entirely uniform dark grey; a broad black band covers the forehead, sides of head and ear-coverts, and reaches halfway down the sides of the neck; lower half of the back, wing-coverts, outer edges of quills, and the tail olive-green; remainder of the quills blackish brown, with partial broad sulphur-yellow inner margins, and a few of the inner primaries have obsolete pale yellowish tips; tail with sulphur-yellow ends to all but the centre pair of feathers. Beneath bright yellow, rather darker and shaded with reddish orange on the chin, throat, and chest; under wing-coverts entirely yellow. Bill black; tarsi and feet slaty black. Total length 7·5 inches, culmen 0·6, wing 3·7, tail 3·6, tarsus 1.

There is no locality given on the label of the single specimen, but I think we may presume that it was obtained in the Mambwe district, and, from the uniform jet-black of the forehead and sides of head and neck, it must be an adult male.

Malaconotus manningi may be readily distinguished from its near ally, *M. melamprosopus*, in having no trace of white on the crown, and in only a few of the inner primaries having obsolete yellow ends.

Key to the Species of MALACONOTUS.

a. Smaller: wing not more than 4 inches; culmen not more than 0·75.
  a^1. Some yellow on forehead in adults: wing not more than 3·5; bill much smaller .... *sulphureipectus*.
  b^1. No yellow on head: wing not less than 3·5; bill larger: crown and back of neck greyish, surrounded in front and on the sides with black in adult males only.
    a^2. With sulphur-yellow ends to most of the tail-feathers.
      a^3. Crown, back of neck, and upper back entirely uniform deep grey; a few of the inner primaries with obsolete yellow ends. *manningi* *.
      b^3. Some white on the crown; most of the quills with distinct yellow ends .... *melamprosopus*.
    b^2. Yellow ends of tail-feathers shaded with orange.
      c^3. Throat and crop vermilion or orange-red . . *multicolor*.
      d^3. Throat and crop black .... *melanothorax*.

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* *Laniarius abbotti*, Richmond, Auk, 1897, p. 161, should apparently be placed between *Malaconotus manningi* and *M. melamprosopus*.

b. Larger: wing more than 4 inches; culmen more than 1 inch. Upper half of the head and back of the neck grey.

c^1. Underparts yellow, with no grey throat.

c^2. With a subterminal black bar to the tail; throat and chest washed with orange-red.

e^3. With the grey hood extending further down over the upper back .... *poliochlamys.*

f^3. Grey hood not extending on to the upper back .... *gabonensis.*

d^2. No subterminal black bar to the tail.

g^3. Entire upper half of head uniform grey; wing-feathers subterminally blackish next to the pale yellow tips .... *lagdeni.*

h^3. With white on sides of head; wing-feathers with no subterminal dark portion.

a^4. White on sides of head extending round the eye, and forming another patch behind the ear-coverts .... *monteiri.*

b^4. White on sides of head confined to a loral band in front of the eye.

a^5. With scarcely any or no trace of chestnut on the crop: wing 4·8 inches .. *poliocephalus.*

b^5. Crop chestnut-yellow: wing 4·5 .... *blanchoti.*

c^5. Crop chestnut: wing 4·2 .... *approximans.*

d^1. Underparts olive, like the back; throat grey .. *gladiator.*

26. Malaconotus blanchoti.

Mpata.

This and the next species are common throughout Nyasaland.

27. Crateropus kirki.

28. Andropadus flavigula.

Xenocichla flavigula (Cab.); Sharpe, Cat. B. M. vi. p. 98 (1881) (Angola, Magungo).

Xenocichla pallidigula Sharpe, Bull. B. O. C. vii. p. vii (1897) (Ntebi).

Luchinde.

The collection contains two specimens, which I have compared with the type of *X. pallidigula*. This species ranges from Angola and Nyasaland to about 2° N. lat., and is replaced from the Niger to the Gambia by *A. flavicollis*

(Swains.), which differs only in having the throat and breast a shade darker.

In 'The Ibis' for 1896, p. 232, I expressed my views of the characters for separating the genus *Xenocichla* from its allies, and I may here follow up the subject to show why I place the present species in the genus *Andropadus*. Since I published my List of the Birds of the Ethiopian Region, I have found that the serration of the bill is a bad character for *Andropadus* (Cat. B. M. vi. p. 3), for it is not always present in *A. importunus*, the type of the genus, so I propose the following amended key for this and the allied African genera :—

a. No distinct long silky plumes on the rump and flanks.
  a^1. Bill deeper than broad, &c. .... *Xenocichla* (1857).
  b^1. Bill not deeper than broad.
    a^2. Bill *not* long and slender, with the culmen straight to the notch in the upper mandible, and the upward curve of the keel as great as the downward curve of the culmen.
      a^3. Tail with a strongly-marked white portion.
        a^4. Above olive, with large white spots. Beneath, with tail closed, entirely white .... *Ixonota* (1851).
        b^4. Above with no white spots ...... *Bæopogon* (1860).
      a^3. Tail with no strongly marked white portion.
        c^4. Greater portion of the bill dark.
          a^5. A distinct short crest of rounded feathers; rictal bristles long and stout; back and closed wings olive .... *Criniger* (1820).
          b^5. No crest.
            a^6. Beneath never uniform yellow. *Andropadus* (1831).
            b^6. Beneath uniform yellow; above uniform brown or olive; bill uniform dark grey or brown, like the tarsi and feet ...... *Chlorocichla* (1881).
        d^4. Greater portion of the bill pale.
          c^5. Overhanging membrane of nostril partially covered with small feathers .... *Trichites* (1860).

d^5. Overhanging membrane of nostril entirely bare .... *Ptyrticus** (1883).

b^2. Bill long and slender, with the culmen straight to the notch in the upper mandible, and the upward curve of the keel as great as the downward curve of the culmen .... *Phyllostrephus* (1837).

b. With distinct long silky plumes on the rump and flanks.... *Rectirostrum* Reichen. 1893 = *Macrophenus* (1859).

Dr. Reichenow has kindly shown me the types of his *Rectirostrum hypochondriacum* and *R. zenkeri*; the former agrees perfectly with one of Du Chaillu's specimens of *Macrosphenus flavicans* Cass. in the British Museum, and Dr. Reichenow agrees with me that his *R. zenkeri* is probably a female or young bird of the same species.

29. EREMOMELA POLIOXANTHIS.

This species has hitherto been known only by the type specimen, which was shot by Mr. T. E. Buckley in Swaziland, and is now in the British Museum.

30. CISTICOLA ALTICOLA, sp. nov.

Fife.

Entire ear-coverts and head above the line of the gape uniform deep rufous; back of neck, back, and upper tail-coverts uniform ashy grey, with a slight brownish tinge on middle back; wings brown, with a grey shade on the coverts and narrow palish edges to the quills. Tail of twelve feathers, long, and rather slender, uniform brown, with no dark subterminal mark, but with white ends to the feathers, extremely narrow on the centre pair, widening out considerably towards the outer ones; cheek below the gape, chin, throat, breast, under tail-coverts, and under wing-coverts white, with the flanks and thighs greyish; inner webs of the quills with partial white edges: bill black; legs pale brown, possibly flesh-colour. Total length 5·6 inches, culmen 0·5, wing 2·25, tail 2·7, tarsus 0·8.

Cisticola alticola may be placed in a key to *Cisticola* somewhat in the following manner:—

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* *Pyrrhurus* Cass. 1859, type *P. scandens*, nec *Pyrrhura* Bp. 1859.

a. Back perfectly uniform, not streaked.
  a^1. Tail-feathers with dark subterminal marks.
    a^2. Crown rufous, contrasting with the colour of the back (lores never rufous like the crown).
      a^3. General colouring of upper parts ashy brown . { *chubbi.* / *angusticauda.*
  b^1. Tail-feathers with no dark subterminal marks.
    b^2. White on tail confined to the ends of the feathers.
      b^3. Entire head above the line of the gape bright rufous .... *alticola*
      c^3. Forehead rufous, remainder of crown brown, like the back; lores and feathers round the eye dull white .... *rufifrons.*

31. Erythropygia zambesiana.

32. Cichladusa arcuata.

33. Cichladusa bocagei.

Cossypha bocagii Finsch et Hartl.; Shelley B. of Afr. i. no. 1166.

Crown grey; a partial white eyebrow surmounting a black patch in front of the eye; back and wings olive-brown; remainder of plumage bright orange-chestnut, with the centre of the breast white. Total length 6·5 inches, wing 3·25.

Hitherto this species was known to me only by the description and good figure of the type specimen (Bocage, Orn. Angola, p. 259, pl. ii. fig. 1), which was met with at Biballa, in Benguela, and I do not know of any other specimen having been recorded. It is not a true *Cossypha*, but has the tail entirely uniform orange-rufous, a well-marked character of *Cichladusa*.

34. Cossypha heuglini.

35. Tarsiger johnstoni.

36. Turdus litsitsirupa.

Luchinde, Ikawa, Fife. Six adults.

37. Turdus libonianus.

Fort Hill.

38. Monticola angolensis.

Fort Hill.

This species is apparently abundant throughout Benguela and Nyasaland, and Mr. Guy A. K. Marshall has recently presented to the British Museum a male and female from Salisbury, in Mashonaland, in May and July, at 5000 feet altitude. He remarks :—" Bill and legs blackish, iris brown. The stomachs contained small coleoptera, grasshoppers, and black ants." He shot the male off the summit of a high tree, and found the female feeding on the banks of a stream, but when disturbed she flew into a tree.

39. Saxicola livingstonii.

40. Thamnolæa arnotti.

Ikawa.

This species is here recorded from Nyasaland for the first time. It ranges southward into the Transvaal, westward into Benguela, and northward into the Uniamwesi and Ugogo countries.

41. Muscicapa grisola.

42. Hyliotis barbozæ.

Hyliota barbozæ Hartl. J. f. O. 1883, p. 329; Sousa, Jorn. Lisb. 1888, p. 222.

Hyliota violacea (nec Verr.) Sharpe, Cat. B. M. iv. p. 248; id. ed. Layard's B. S. Afr. pp. 336, 836 (1884).

The collection contains an adult pair of this species, probably from the Mambwe district. Otherwise the species is known to me only by specimens from Benguela.

J. and E. Verreaux's description of their *H. violacea* from the Gaboon agrees perfectly with *H. flavigastra*, and not with *H. barbozæ*, as the following key will show :—

a. A large patch of white on the wing-coverts.
  a^1. No white showing beyond the wing-coverts.
    a^2. Above glossy violet or blue-black .... *flavigastra.*
    b^2. Above brownish black, with little or no gloss .... *australis.*
  b^1. Two inner quills with white outer edges .... *barbozæ.*
b. No white on the wing .... *nehrkorni.*

43. Platystira peltata.

Ikawa.

44. Elminia albicauda.

Ikawa.

45. TERPSIPHONE PERSPICILLATA.

46. HIRUNDO MONTEIRI.
Luchinde and Fife.

47. EURYSTOMUS GLAUCURUS.

48. CORACIAS CAUDATUS.
Fife.

49. MELITTOPHAGUS MERIDIONALIS.
Fife.

50. UPUPA AFRICANA.
Mambwe district.

51. IRRISOR CYANOMELAS.
Ikawa.

52. BYCANISTES BUCCINATOR.

53. CORYTHORNIS CYANOSTIGMA.

54. HALCYON SWAINSONI.

Halcyon swainsoni Smith, S. Afr. Journ. 1834, p. 143 (S. Africa).

Halcyon pallidiventris Cab. J. f. O. 1880, p. 349; Sharpe, Cat. B. M. xvii. p. 235; Shelley, B. Afr. i. no. 1616.

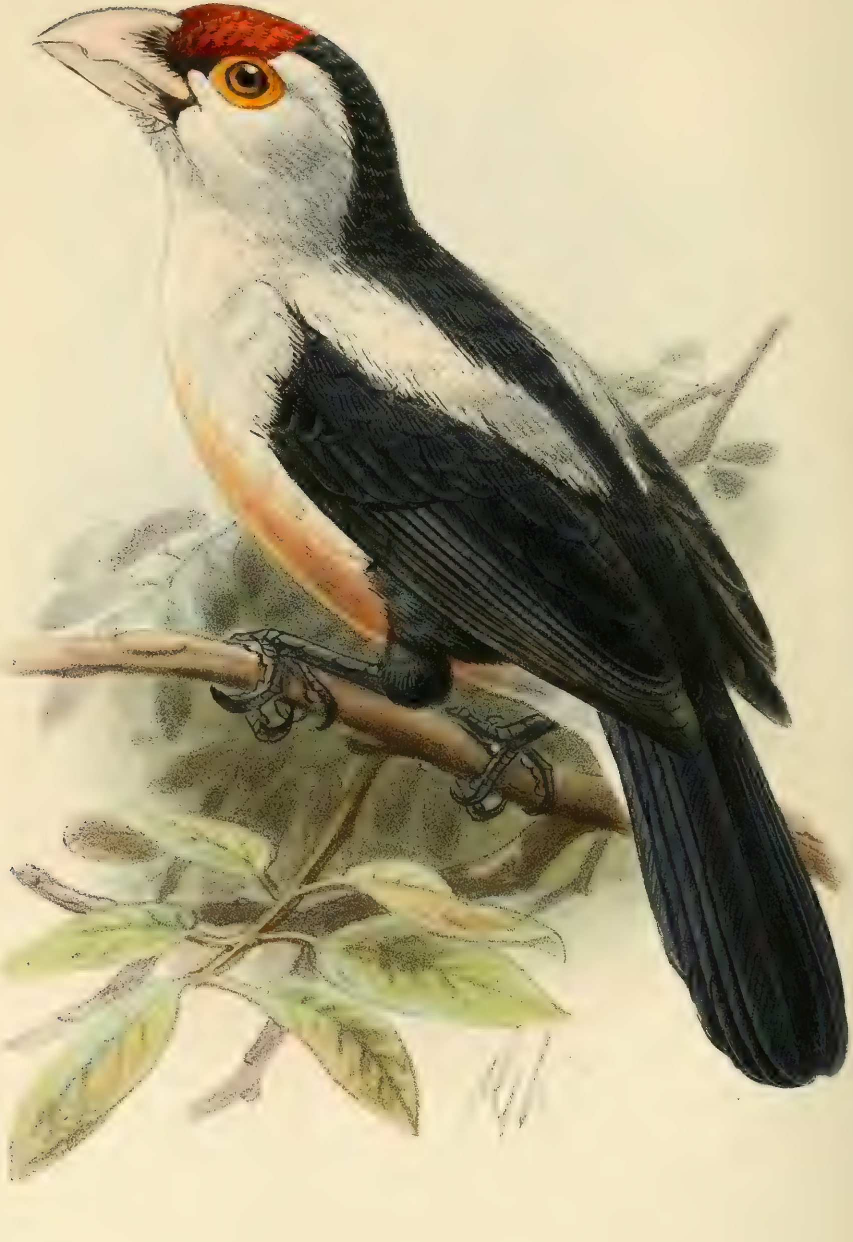
It is strange that the earlier name of *H. swainsoni* for this bird should have been so long overlooked.

55. HALCYON CHELICUTENSIS.
Kwilomba, near Fife, on the Stevenson Road.

56. COLIUS AFFINIS.
Ikawa and Fife.

This is the common E. African form of Coly; it ranges from Nyasaland, about 14° S. lat., northward into Shoa and westward to the Albert-Edward Nyanza. It is replaced southward from the Shiré district to the Cape of Good Hope by *C. striatus*, and northward by its very near ally *C. leucotis*, which is apparently a local Abyssinian form. To the west *C. nigricollis* replaces *C. affinis* in the Congo district, the Nyam-nyam country, and the Camaroons.

Ibis, 1899 Pl. VI.



J. G. Keulemans del. et lith.

Mintern Bros. imp.

MELANOBUCCO MACCLOUNII.

57. TURACUS LIVINGSTONII.

Ikawa.

58. GYMNOSCHIZORHIS LEOPOLDI.

Luchinde.

The collection contains five specimens of this Touracou, of which two are immature. These immature birds differ from the adults in having the sides of the forehead and bare portion of the head brown instead of black, the chin and upper throat being thinly covered with a dark brown down.

59. CHRYSOCOCCYX KLAASSI.

60. INDICATOR INDICATOR.

Fife.

61. MELANOBUCCO MACCLOUNII, sp. nov. (Plate VI.)

Luchinde, Ikawa, Fife.

Above brownish black, with the forehead and front half of the crown glossy crimson-shaded scarlet, and with a very broad white band from the side of the neck down the side of the upper back. A large bare space round the eye pale (reddish brown in dried skins), has the posterior half surrounded with white, which colour extends over the cheeks, ear-coverts, sides of neck, throat, under tail-coverts, and most of the under surface of the body, but the lower chest and abdomen are strongly washed with bright orange-pink; the feathers on the sides of the chest are long, broad, and pointed, and faintly tinged with pale yellow; sides of abdomen and the thighs black, like the lower back; under wing-coverts mostly white, and the quills have partial narrow whitish inner edges. Next to the bill, in front of the bare skin of the face, cheeks, and chin, are small black patches furnished with stiff bristles, directed forward. Bill buff; legs dark reddish brown. Total length 7·2 inches, culmen 0·8, wing 3·4, tail 2·6, tarsus 0·85.

Melanobucco macclounii may be introduced into the key given Cat. B. xix. p. 17, thus:—

a. Bill pale, not black.

- c^1. Abdomen orange-red; under tail-coverts white; throat white.
  - a^2. Sides of head and neck ashy brown; no white on the back .... *levaillanti.*
  - b^2. Feathers on the sides of the head and neck and the sides of the back white .... *macclounii.*

62. MELANOBUCCO TORQUATUS.

Mpata and Fife.

63. CAMPOTHERA ABINGDONI.

Ikawa.

64. CAMPOTHERA SMITHI.

Fife.

65. DENDROPICUS ZANZIBARI.

Ikawa.

66. MESOPICUS GRISEOCEPHALUS.

Ikawa.

67. PŒOCEPHALUS MEYERI.

Fife and Luchinde.

Although this is the first time *P. meyeri* has been recorded from Nyasaland, the species ranges from Benguela, Damaraland, and the Transvaal northward into Abyssinia.

68. SYRNIUM WOODFORDI.

Ikawa.

The one specimen in this collection is the most rufous form I have seen of this species, which ranges throughout Eastern Africa northward from Natal, and includes *S. nigricantius* Sharpe, from Mpapwa, which is the darkest variety I have seen. This species is represented in West Africa by *S. nuchale* Sharpe, a fairly distinct rufous form, with a near ally (*S. bohndorffi*) from the Nyam-nyam country. Dr. Reichenow (in Werther's 'Die mittl. Hochl. Deutsch-Ost-Afr.') has lately proposed to recognize three other East-African races under the titles of *S. sualicum*, *S. umborium*, and *S. zanzibarium*; but, with the fine series in the British Museum, I have come to the conclusion that *S. woodfordi* from Eastern Africa varies considerably in the shade of plumage without losing its specific characters.

69. Glaucidium perlatum.

Karonga.

70. Bubo lacteus.

Bubo verreauxi Bp.; Ogilvie Grant, Ibis, 1896, p. 487 (Nyika Mt.).

This large Owl is generally distributed over tropical and South Africa.

71. Haliaetus vocifer.

72. Astur polyzonoides.

Ikawa.

73. Accipiter ovampensis.

Fife.

The collection contains an immature specimen in the brown and white plumage of this rare and little-known species. It is the nearest African representative of our Common Sparrow-Hawk, *A. nisus*.

74. Polyboroides typicus.

75. Ibis æthiopicus.

76. Butorides atricapilla.

Luchinde.

77. Ardetta podiceps.

78. Tantalus ibis.

Luchinde.

79. Plotus levaillanti.

Luchinde.

80. Sarcidiornis melanota.

Luchinde.

81. Pternistes cranchi.

82. Francolinus coqui.

Luchinde and Ikawa.

This species, here recorded from Nyasaland for the first time, ranges over South and East Africa generally, into

Benguela on the west, and nearly to the Equator in East Africa.

83. Grus carunculata.

Luchinde.

The collection contains a beautiful specimen of this fine Crane. It ranges over Africa south of Nyasaland and Benguela.

84. Phyllopezus africanus.

85. Lobivanellus lateralis.

Luchinde.

86. Stephanibyx inornatus.

Luchinde.

87. Charadrius pecuarius.

88. Ægialitis hiaticula.

89. Arenaria interpres.

90. Totanus nebularius.

91. Totanus stagnatilis.

92. Totanus hypoleucus.

Luchinde.

93. Numenius arquatus.

94. Numenius phæopus.

95. Himantopus himantopus.

Karonga.

96. Œdicnemus vermiculatus.

Luchinde.

97. Cursorius temmincki.

Luchinde.

98. Rhinoptilus chalcopterus.

Luchinde.

99. Glareola pratincola.

XXXII.—*Field-notes on Birds collected in the Philippine Islands in* 1893–6.—Part III. By John Whitehead.

[Continued from p. 246.]

d. Picariæ and Psittaci.

205. Chætura picina Tweedd. (Grant, Ibis, 1897, p. 242.)

Fairly common among the mountains of Northern Leite, but difficult to obtain, owing to the height and pace at which the birds fly, and to the want of open space to shoot at them.

Iris dark brown; bill black; legs lead-grey.

In Leite, Luzon, and Catanduanes I saw, on several occasions, a large Swift, either *C. gigantea* or *C. celebensis*, flying very high. In Negros, on the morning I left Canloön, one of these Swifts was in numbers over a sugar-cane plantation that was being harvested.

206. Collocalia linchi Horsf. & Moore. (Grant, Ibis, 1895, p. 462.)

Met with among the pine-forests of North Luzon at an altitude of 7500 feet.

The various Swifts found in the Philippines probably occur in all the larger islands, but as they mostly fly at great heights and over country where, if dropped by a shot, it would be next to impossible to find them, the genus is somewhat neglected by naturalists.

207. Collocalia fuciphaga (Thunb.). (Grant, Ibis, 1895, p. 461; 1896, p. 555.)

Was obtained at nearly 7000 feet on Monte Data and also in Negros.

208. Collocalia troglodytes G. R. Gray. (Grant, Ibis, 1897, p. 243.)

Fairly common in Leite.

209. Collocalia whiteheadi Grant, Ibis, 1895, p. 459.

Obtained near the summit of Monte Data.

Iris brown; bill black; feet brown.

210. Macropteryx comata (Temm.). (Grant, Ibis, 1894, p. 409; 1896, p. 555.)

This Tree-Swift is fairly common and found throughout the large islands.

211. Caprimulgus manillensis G. R. Gray. (Grant, Ibis, 1894, p. 518; 1895, p. 462; 1896, p. 121.)

Common in Luzon in open districts, especially near the sea if the coast is flat and sandy; in such localities it nests in the sea-drift just above high-water mark. It was met with in the mountains of Benguet up to 4000 feet. The note of this Nightjar is very loud, and may be written "tōk-tōk-tōk." No member of this genus has yet been recorded from Samar or Leite; but in the former island I saw a Nightjar several times, and in Leite I had a shot at one in the mountains as it flew over my house one evening.

212. Caprimulgus griseatus Gray. (Grant, Ibis, 1895, p. 462.)

The Small Grey Nightjar is fairly common in sandy districts in North Luzon. Our first specimen was obtained one evening in Catanduanes, flying over some sandy grass-country near the sea-coast. The following February, however, we met with this Nightjar in numbers; it frequented the dried-up course of the Abra river, among the casuarina-trees and coarse grass which grew in the sandy soil brought down by the floods in the wet season. One is first attracted to this species by its peculiar note, which is a curious short whistle. This note is uttered only when the bird is on the wing at dusk, and when it is quite invisible, from its habit of flying low over the sand. It rests on the sand from time to time, remaining perfectly quiet. As the bird seldom shows above the sky-line it is difficult to shoot. At Cape Engaño I met with a pair of this Nightjar nesting on the sea-shore among the sea-drift, which here consists of huge forest-trees. The eggs, two in number, were laid on the sand close beside a tree-trunk. After flushing the birds I left the eggs until the return of the owners.

Though this species has not been recorded from Negros, I am quite sure it will be met with on that island, as during a long ride one night over some barren sandy ground I repeatedly heard its note.

Iris black; bill and feet brown.

213. Lyncornis macrotis (Vigors). (Grant, Ibis, 1894, p. 519; 1895, p. 463.)

Fairly common in the lower valleys in the mountainous districts of North Luzon. This species has the pretty habit of its Malay cousin, *L. temmincki.* Just at the last moment of the tropical day, when the highest heavens are tinged with the soft light of the setting sun, *Lyncornis* leaves its bed among the dead leaves and grass and flies high into the air, rising and descending with vertically-held wings, uttering every now and then its pretty whistle, "Tet-ā-bow, tet-ā-bow." But soon, when the last rays have ceased to gild the sky, it descends to mother earth to feed on winged insects, its pretty note being then exchanged for a frog-like croak. Towards sunrise *Lyncornis* once more rises to the heavens and utters the same "Tet-ā-bow," but it shortly dives to the ground, and rests unseen until the evening light again tempts it from its concealment.

Either this species or an allied one occurs in the mountains of Mindoro, as I often heard its evening cry when camped out at 4500 feet. I have little doubt that I saw one of the genus in Samar, though I never heard it.

214. Lyncornis mindanensis Tweedd. (Grant, Ibis, 1894, p. 519.)

One specimen obtained in Benguet at an altitude of 3000 feet, where it was flying in company with *L. macrotis,* which was much more plentiful. Whether these two species are distinct or not is an open question. They are certainly very similar and frequent the same district, so that it is rather difficult to believe that two forms so closely allied are really distinct. Apart, however, from the slight differences in coloration, this species seems to be a slightly smaller bird.

215. Batrachostomus microrhynchus Grant, Ibis, 1895, p. 463; 1896, p. 121.

Two specimens were obtained by us on the summit of Monte Data at an altitude of 7500 feet, and a third on the coast-level at Cape Engaño. The finding of all specimens of this genus is a mere chance, the birds perching by day in the thickest and most tangled masses of undergrowth, which they seldom leave, even when disturbed.

Iris dull creamy yellow, speckled with brown on the outer edge; upper mandible dull brown; lower mandible and inside of mouth dull yellow; feet creamy white.

216. Eurystomus orientalis (Linn.). (Grant, Ibis, 1894, pp. 409, 519; 1895, p. 114; 1896, pp. 122, 555; 1897, p. 243.)

Widely distributed throughout the entire group. Frequenting the edges of forest, and especially partial to dead trees left standing in old clearings.

217. Merops bicolor Bodd. (Grant, Ibis, 1894, pp. 409, 519; 1897, p. 243.)

Distributed widely throughout the Philippines. I noticed a very large nesting colony on the Rio Grande (North Luzon), a steep sandy bank being riddled with holes; the birds were flying in and out of the holes in dozens, and made a beautiful picture in the bright sunshine.

218. Merops philippinus Linn. (Grant, Ibis, 1894, p. 520.)

As widely distributed throughout the islands as *M. bicolor*, but has also an extended range over the Malay Archipelago, *M. bicolor* being the true Philippine Bee-eater. Curiously, no species of Bee-eater has hitherto been obtained in Palawan or Balabac, two islands of which the ornis is comparatively well known, and which have the genus *Merops* common to the west and to the south of them. We met with *M. philippinus* in Benguet at nearly 5000 feet.

Iris lake; bill and feet black.

219. Alcedo ispida var. bengalensis.

Alcedo ispida Linn. (Grant, Ibis, 1894, pp. 409, 520.)

A winter migrant, which spreads over the whole archipelago. This Kingfisher was fairly common on a small river at an altitude of 4000 feet in North Luzon.

220. Alcyone cyanipectus (Lafr.). (Grant, Ibis, 1895, p. 112; 1896, p. 471.)

Ceyx cyanipectus, Lafr. (Grant, Ibis, 1894, p. 520.)

Fairly common on most rivers and streams. In North Luzon this Kingfisher frequents rocky streams, and about sunset used to leave the seclusion of the thick bushes on the edges of the water and perch on the rocks in mid-stream. A native told me that this little bird sometimes falls a victim to the large fishing monitor lizards when diving into the stream after its food. The habits of all the Philippine Alcyones met with by us are similar: they frequent the clear streams inland, perching in the dense overhanging growth, which is met with on all tropical rivers. The birds are often difficult to obtain, from their habit of taking refuge in such places when alarmed. I found a nest of *A. cyanipectus* containing freshly-hatched young in North Luzon on 26th May.

Jr. Iris and bill dull black; feet pale pink.

221. Alcyone nigrirostris B. & W. (Grant, Ibis, 1896, p. 556.)

Was met with in Negros, where, however, it seemed to be rare.

Iris and bill black; feet coral-red.

222. Alcyone fluminicola (Steere). (Grant, Ibis, 1897, p. 244.)

A few specimens of this beautiful Kingfisher were obtained in Central Samar. This species was also observed on one occasion in Leite.

Iris and bill black; feet coral-red.

223. PELARGOPSIS GOULDI Sharpe. (Grant, Ibis, 1896, p. 470.)

We found this species fairly common on the Baco river in Mindoro, where, in November, it was in perfect plumage.

224. PELARGOPSIS GIGANTEA Walden. (Sharpe, B. M. C. xvii. p. 100; Grant, Ibis, 1897, p. 210.)

Fairly common in the mangrove-swamps in Samar—my specimens being unfortunately lost in the 'Wieland.'

225. CEYX MELANURA Kaup. (Grant, Ibis, 1895, p. 114.)

The *Ceyx* group of Kingfishers are inhabitants of the forest, rivers and streams being apparently non-essential to their well-being. Compared with the numbers of *C. euerythra* that may be met with in a Bornean forest these Kingfishers are somewhat rare in the Philippines; in three years in Luzon and other islands we succeeded in collecting only some six specimens of this genus.

Iris black; bill and feet vermilion.

226. CEYX SAMARENSIS Steere. (Grant, Ibis, 1897, p. 243.)

Three specimens of this species were obtained by us in the Samar forests.

Iris black; bill and feet vermilion.

227. HALCYON COROMANDUS (Lath.). (Grant, Ibis, 1896, p. 122.)

This widely-distributed species was met with by us at Cape Engaño, in the mangrove-swamps near the coast.

228. HALCYON CHLORIS (Bodd.). (Grant, Ibis, 1896, p. 556; 1897, p. 245.)

Common and widely distributed throughout the entire group; generally met with on the sea-coast, but occasionally some distance inland.

229. HALCYON GULARIS (Kuhl). (Grant, Ibis, 1894, pp. 409, 520; 1896, p. 556; 1897, p. 244.)

This species has been recorded from all the larger islands of the group, but curiously has not yet extended its range into Palawan and the Calamianes. In Luzon it is met with in all open country where water is plentiful, even on the river in Benguet at over 4000 feet. At Cape Engaño I found a nest containing five almost fully-fledged young on the 7th May. The nest was in the high bank of a river.

230. Halcyon winchelli Sharpe. (Grant, Ibis, 1896, p. 556.)

We met with this beautiful species on only one occasion in Negros. During a collecting-ramble I noticed a bird hammering something it had captured on the topmost branch of a high tree; a lucky shot brought the bird to the ground, and it proved to be of this species.

Iris dark brown; bill black, base of lower mandible dull white; feet dull light olive-yellow.

231. Halcyon moseleyi Steere. (Grant, Ibis, 1896, p. 557.)

We met with three male specimens of this fine species at the base of Canloön volcano; the birds were shot in the forest in the vicinity of a river. This species, both in appearance and habits, is much nearer to *Carcineutes* than to *Halcyon*. *H. moseleyi* has hitherto been met with only in Negros.

Iris dark brown; upper mandible black, with a yellow ridge; lower mandible pale king's yellow; feet olive-yellow.

232. Hydrocorax hydrocorax (Linn.). (Grant, Ibis, 1894, p. 520.)

Common in North Luzon, where it is known to the Spaniards as the "Calāū"; in fact, whenever I met a Spaniard he always began to describe this bird to me, and wanted to know if I had ever seen it. I may say that the Calāū is one of the noisiest of birds; if a small flock were within half a mile it would be difficult for the most ordinary observer to escape hearing and seeing it. So, perhaps, for this reason the Spaniards have observed it too. These large Hornbills are often met with in small flocks, accompanied by their white-speckled young; they fly from forest to forest, their powerful wing-beats being heard at a great distance. A few quick strokes, followed by a long soar, is their mode of progression. On the wing, and especially on reaching their destination, they make as much noise as possible; the loud "kang-haw, ha-hāw-how" may be heard at the distance of nearly a mile, and echoes through the too often silent forests. On skinning most species of Hornbills the loose way in which the skin is attached to the flesh, especially on the breast and neck, is very remarkable, and gives one the idea that the bird may perhaps have the power of inflating itself during flight.

The whole of the plumage and the bare skin on the face are thickly covered with a yellow oily powder (obtained from the oil-gland), which comes off very easily and spoils the look of the bird after skinning.

Adult. Iris white; bill dull scarlet; feet vermilion.

Juv. (not quite adult). Iris hazel; bill dull red; feet reddish brown.

233. HYDROCORAX SEMIGALEATUS (Tweedd.). (Grant, Ibis, 1897, p. 245.)

This Hornbill is closely allied to the preceding species, and its habits are similar. That no member of this genus has been obtained in Mindoro is one of the remarkable facts in the distribution of Philippine birds.

Ad. Iris pale yellow; basal half of bill bright lake-red, rest of bill yellowish white; feet dull brick-red.

Jr. (1st plumage). Iris brown; bill black; feet brownish red.

234. PENELOPIDES MANILLÆ (Bodd.). (Grant, Ibis, 1894, pp. 409, 520.)

The small Philippine Hornbills are always one of the ornithological features of the various Philippine Islands. They are often remarkably distinct from one another, considering the small sea-space that divides the different species.

The note and habits of the whole genus are similar. They frequent old forest, but are very partial to overgrown clearings, where they may be met with in small flocks. In North Luzon I once met with a flock of this species on the wing: they were crossing a wide plain in the great heat of the day, and had their bills open, as if suffering from the sun and fatigue. This flock was doubtless moving to more suitable feeding-grounds.

The note resembles the sound of a penny trumpet; it may be written "tot-toot, tūt-tūt."

The flight is like that of *Hydrocorax*—a few swift upward strokes, followed by a long, slightly inclined soar.

235. PENELOPIDES SAMARENSIS Steere. (Grant, Ibis, 1897, p. 245.)

Common in Samar and Leite.

236. PENELOPIDES MINDORENSIS Steere. (Grant, Ibis, 1896, p. 471.)

Met with in Mindoro.

Iris dark red-brown; bill brownish yellow, with black barrings, white at the base; bare skin on face pale bluish white; feet dull black.

237. PENELOPIDES PANINI (Bodd.). (Grant, Ibis, 1896, p. 557.)

Common at the base of Canloön volcano, Negros.

Male. Iris red-brown; face-skin bluish white; feet dark olive-brown. The male has the bare skin on the sides of the bill whiter than the female. The bill in this genus shows little change after death.

238. CRANORRHINUS WALDENI Sharpe. (Grant, Ibis, 1896, p. 557.)

This genus is very distinct in habits from *Hydrocorax*. Instead of the powerful penetrating cry of *Penelopides*, *Cranorrhinus* has a bleating note, somewhat like the cry of a goat. All the birds I saw in the forests of Negros were solitary and frequented the highest trees. The most interesting difference, however, is that, while *Hydrocorax* smothers himself in yellow powder, *Cranorrhinus* never uses powder at all, the bare skin on its face being bright yellow without the assistance of the powder-puff. I did not obtain any young birds, which should prove most interesting.

Iris golden lake-brown; bill of various shades of vermilion, pink, and orange; bare skin on face bright sulphur-yellow; feet dusky brown, soles of feet olive-yellow.

239. Harpactes ardens (Temm.). (Grant, Ibis, 1896, p. 123; 1897, p. 245.)

This Trogon apparently occurs only in the most eastern islands of the Philippines, being found from the extreme north of Luzon to Basilan.

At Cape Engaño it was fairly common in the thick forests; it is not rare in Samar and Leite.

Iris dark brown; orbital skin deep French blue; base of bill light green fading into pale yellow, with the tip bright king's yellow; feet French blue, nails and part of the toes yellowish brown.

240. Iyngipicus validirostris Blyth. (Grant, Ibis, 1895, p. 114; 1896, pp. 123, 471.)

Iyngipicus maculatus. (Grant (nec Scop.), Ibis, 1894, p. 520.)

Fairly common in Luzon, especially in the mountainous districts, where it is to be met with as high as 7500 feet. This species, like the rest of the genus, is more common on the edges of the forest and in sparsely wooded country, especially if a number of dead trees are left standing. We met with *I. validirostris* in Catanduanes and in the mountains of Mindoro up to 5000 feet.

Iris dark brown; upper mandible and half of lower black, basal half of lower mandible greenish yellow; feet dull olive-green.

241. Iyngipicus maculatus (Scop.). (Grant, Ibis, 1895, p. 115; 1896, p. 557.)

Rather scarce at the base of Canloön volcano, Negros, only one male and three females being obtained.

Iris brown; upper mandible and half of lower slaty black, the basal half of the lower dull white; feet olive-green.

242. Iyngipicus leytensis Steere. (Grant, Ibis, 1897, p. 245.)

Fairly common in Samar and Leite.

243. CHRYSOCOLAPTES HÆMATRIBON (Wagl.). (Grant, Ibis, 1894, p. 520.)

This species is common in the mountainous districts of North Luzon, being met with up to 7500 feet. It is generally found in true forest, but is also met with on dead timber in open places. An Igorroti brought me a nestling on the top of Mount Data in January.

Iris dark brown; bill horny grey; feet pale greyish blue.

244. CHRYSOCOLAPTES RUFO-PUNCTATUS Hargitt. (Grant, Ibis, 1897, p. 245.)

Common in the forests of Samar and Leite.

245. CHRYSOCOLAPTES XANTHOCEPHALUS Walden & Layard. (Grant, Ibis, 1896, p. 558.)

Fairly common in the big forest at the base of Canloön, in Negros.

Iris brown; bill dull greyish green, base of lower mandible dull greyish yellow; feet dull ochreous yellow.

Though no member of this genus has been recorded from the island of Mindoro, I am almost certain that it occurs there, for I have noted down in my journal that I saw a *Chrysocolaptes* fly over my tent on 4th November, 1895.

246. MICROSTICTUS FULIGINOSUS Tweedd. (Grant, Ibis, 1897, p. 246.)

This genus of Woodpeckers is known only from the eastern islands of the Philippines, not being recorded either from Mindoro or the Negros group of islands. It was somewhat rare in the islands of Samar and Leite.

Iris pale straw-yellow; bill greyish white; feet dull greyish blue.

247. MICROSTICTUS FUNEBRIS (Valenc.). (Grant, Ibis, 1894, p. 410; 1895, p. 115; 1896, p. 123.)

In Luzon this species is by no means rare and is found in thick forests. It was also met with in the island of Catanduanes.

248. Thriponax javensis (Horsf.). (Grant, Ibis, 1894, pp. 409, 520.)

This widely-dispersed species has a peculiar distribution in the Philippines, having been met with only in Luzon and Mindanao, while the intermediate islands are inhabited by other species. From Samar and Leite we have a very distinct species, *T. pectoralis*, from Negros a form inseparable from *T. hargitti* of Palawan, and from Mindoro *T. mindorensis*, closely allied to the Palawan Woodpecker.

All the members of this genus inhabit the thick forest, being rarely found outside; but in the breeding-season the solitary dead tree-trunks, often some distance from the forest, seem to be in request.

We met with *T. javensis* among the oak-trees on the summit of Monte Data at nearly 8000 feet.

249. Thriponax pectoralis Tweedd. (Grant, Ibis, 1897, p. 246.)

This fine Woodpecker was not rare in the forests of Samar and Leite.

Iris straw-yellow; upper mandible greyish black, lower dull slate-blue; feet dull slate-blue.

250. Thriponax mindorensis Steere. (Grant, Ibis, 1896, p. 473.)

Fairly common in the forests of Mindoro.

Iris straw-yellow; bill slaty black; feet dull slate-grey.

251. Thriponax hargitti Sharpe. (Grant, Ibis, 1896, p. 558.)

That the Mindoro species should be different, and the Panay and Negros bird the same as the Palawan Woodpecker, is another remarkable point in the distribution of Philippine birds.

Jr. ♂. Iris greyish white; feet and lower mandible slate-blue; upper mandible black, tipped and based with white.

252. Xantholæma hæmatocephala (P. L. S. Müller). (Grant, Ibis, 1895, p. 466; 1896, p. 474; 1897, p. 247.)

Common in Luzon. Generally found in or near high forest. Like other members of the genus, this Barbet is fond of sitting alone on the dead branch of some high tree, from whence it keeps up a continual "booh-booh" note for hours at a time. This species was also obtained in Mindoro, Samar, and Leite.

Iris dark brown; eyelids and feet coral-red; bill black.

253. XANTHOLÆMA INTERMEDIA Shelley.

Xantholæma rosea (Dumont). (Grant, Ibis, 1896, p. 558.)

This species is supposed to be hardly separable from *X. rosea* of Java; it is fairly common in Negros.

254. SURNICULUS VELUTINUS Sharpe. (Grant, Ibis, 1894, p. 410; 1896, p. 559; 1897, p. 247.)

This small black Cuckoo is met with singly in most of the larger Philippine Islands; it frequents large forests. *Surniculus* is a genus believed by some to mimic the Crow-Shrikes, and, on account of its close resemblance to *Dicrurus*, is supposed to deposit its egg in the nest of that genus. In Negros and those islands inhabited by *D. mirabilis* this theory of mimicry cannot hold.

Eye dark brown; bill and feet black.

255. HIEROCOCCYX SPARVERIOIDES (Vig.). (Grant, Ibis, 1896, p. 559.)

One specimen obtained on Canloöu volcano, Negros.

256. CUCULUS MICROPTERUS Gould. (Grant, Ibis, 1896, p. 560.)

One specimen, same as the above.

257. CACOMANTIS MERULINUS (Scop.). (Grant, Ibis, 1894, p. 520; 1896, pp. 474, 560.)

This small Cuckoo is common throughout the Philippines. It is found often at considerable altitudes in Luzon, and was common at nearly 7000 feet in Negros.

258. CHALCOCOCCYX XANTHORHYNCHUS (Horsf.). (Shelley, B. M. C. xix. p. 289; Grant, Ibis, 1897, p. 210.)

One specimen was shot in the forests of Samar, which was unfortunately burnt along with the rest of the collection.

♂. Iris lake-red; orbital skin vermilion; bill orange, vermilion at base; feet olive-brown, soles yellow.

259. Eudynamis mindanensis (Linn.). (Grant, Ibis, 1894, p. 520; 1895, p. 115; 1896, p. 474; 1897, p. 247.)

Found commonly throughout the archipelago, inhabiting the high forest. We obtained a bird of considerably larger dimensions in Fuga Island, but as only the male was met with it is impossible to say whether it represents a distinct species.

♂. Iris scarlet-lake; bill light pea-green; legs horny lead-blue.

♀. Iris scarlet-lake; bill light pea-green; legs dull greenish brown.

260. Centropus mindorensis (Steere). (Grant, Ibis, 1896, p. 475.)

This species is apparently confined to Mindoro; like th two following species, it is a lover of thick tangled growth in fairly open country.

Iris lake-red; bill black; feet greenish black.

261. Centropus viridis (Scop.). (Grant, Ibis, 1894, p. 410; 1895, p. 466; 1897, p. 247.)

Common in all the open country, and ranging throughout the entire archipelago.

262. Centropus javanicus (Dumont). (Grant, Ibis, 1894, p. 520; 1896, p. 474.)

Like the preceding species in distribution and habits; especially fond of coarse lalang-grass plains, where a few tangled thickets are to be met with. *C. javanicus*, unlike the last-named two species, which are confined to the Philippines, is widely distributed throughout Malaya.

263. Centropus melanops Less. (Grant, Ibis, 1897, p. 247.)

This handsome Cuckoo is fairly common in Samar and Leite, where, unlike the last three species mentioned, it frequents the tops of high trees in old forest, though it is at times met with in neglected clearings.

Iris lake-red; bill and feet black.

264. Centropus steerii B. & W. (Grant, Ibis, 1896, p. 474.)

This fine Cuckoo, like *C. melanops*, frequents high forest-trees; it is apparently confined to Mindoro.

265. Centropus unirufus (Cab. & Heine). (Grant, Ibis, 1894, p. 410.)

This curious Cuckoo is confined to Luzon, where it is by no means common. We met with it only in the bamboo-jungles at the base of Monte Arayat.

266. Lepidogrammus cumingi (Fraser). (Grant, Ibis, 1894, p. 520; 1895, p. 466; 1896, p. 123.)

Common in the forests of Luzon, reaching an altitude of nearly 7000 feet in the central Cordillera in Lepanto. Like *C. unirufus* this Cuckoo haunts the thick tangles of creepers and low branches of trees. The crop of a bird shot in Benguet contained a nearly perfect specimen of a Flying Lizard (*Draco* sp. inc.). Sometimes the stomach is full of strong-smelling bugs, making the bird a most objectionable subject for a *post mortem*.

Iris lake-red; orbital skin dull pink; feet light horny cobalt-blue. In the young the iris is brown.

267. Dasylophus superciliosus (Cuv.). (Grant, Ibis, 1894, p. 410; 1896, p. 123.)

This and the previous species are, perhaps, the most remarkable birds in Luzon, and are probably confined to this and the small neighbouring islands. This species was obtained by us in Catanduanes, and has been found in Marinduque by other collectors. The young bird described in 'The Ibis' (1895, p. 262) under *Lepidogrammus cumingi* is really the nestling of this species. In the forests this Cuckoo frequents the middle growth and the lower branches of high trees, hopping and creeping in the tangled masses of creepers after snails, beetles, and other insects. As many beetles fall to the ground the instant they feel the least shock on the bough on which they are resting, the Cuckoo is continually dropping to the earth to secure them. A female shot at Engaño on

1st of May contained a white egg, which was unfortunately broken before she was skinned.

Iris yellow; bare skin on face king's yellow; upper mandible pea-green, orange spot at base; lower mandible yellowish green, at tip pea-green, base orange; feet yellow.

268. Cacatua hæmaturopygia (P. L. S. Müller). (Grant, Ibis, 1895, p. 263; 1896, pp. 475, 560; 1897, p. 248.)

Met with throughout the entire archipelago, but, curiously enough, we never noticed a single Cockatoo in the valley of the Rio Grande. During our expedition to the Province of Isabella, the natives told me that this species was not known to them; and also during my trip to Cape Engaño, in the north-east of Luzon, we found it absent. So perhaps the species does not pass the high mountains which divide Luzon at 16° longitude.

269. Prioniturus discurus (Vieill.). (Grant, Ibis, 1895, p. 263; 1896, p. 560; 1897, p. 248.)

Met with by us in Catanduanes, Samar, Leite, and Negros. The habits of all the members of this genus are very similar; they are more often noticed on the wing, flying swiftly over the forest at great heights, uttering shrill screeches, than when perched quietly among the green leaves of the high trees, in which they move with slow deliberation. They nest often in large colonies in old tree-trunks, which remain standing for years in the native clearings; these trees are of great height and riddled with the borings of various Woodpeckers, more especially of the species of *Thriponax*.

Iris black; bill and feet bluish white.

270. Prioniturus mindorensis Steere. (Grant, Ibis 1896, p. 475.)

Fairly common in the forests of Mindoro, my specimens having been obtained on Monte Dulangan, at an altitude of nearly 5000 feet.

Iris stone-grey; bill white, with a bluish tinge; feet greyish green.

271. Prioniturus luzonensis Steere. (Grant, Ibis, 1894, p. 410; 1895, pp. 115, 466.)

We found this beautiful species common about the foot of Monte Arayat, in Central Luzon, though we failed to meet with it in Albay or Catanduanes. In North Luzon it was abundant in the maize-fields, feeding on the flower at the top of the plant. Young were obtained in the month of May in Isabella.

272. Prioniturus montanus Grant, Ibis, 1895, p. 466.

While resting at the village of St. José, during our weary tramp through the Province of Abra to the highlands of Lepanto, a native brought me a Parrot in a cage, which I at once saw must be either a new species or a bird imported from Celebes. The Indians told me that the Parrot had been snared in their maize-fields, and that it was common enough when the cereal was ripe. They presented the bird to me, and we carried it with us to the summit of Monte Data, and thence to Manila, where it succumbed, probably to the excessive heat. During my expedition to Benguet, on three occasions I fancied I saw a green Parrot, but the birds were so quick on the wing that in the forests it was impossible to shoot them. On reaching the summit of Monte Data, however, we found the bird fairly common, and, just after sunrise on those frosty mornings, small flocks would dash round about our camp among the pine-trees with noisy screeches. It seems curious that such a thoroughly tropical-looking bird should prefer the cold of Monte Data, where it freezes nightly, to the warm plains below. On our return journey through Abra, this species and *P. luzonensis* were found frequenting the same maize-fields.

Iris dark brown ; bill and feet whitish lead-blue.

273. Tanygnathus luconensis (Linn.). (Grant, Ibis, 1894, p. 410; 1896, pp. 475, 561; 1897, p. 248.)

Common and met with in all the larger Philippine Islands, nesting in numbers in old tree-trunks in the month of June in Samar.

Iris pale straw-yellow, with an inner ring of brown ; upper mandible rosy red; lower mandible pale pinkish red; feet olive-brown.

274. Tanygnathus everetti Tweedd. (Grant, Ibis, 1895, p. 116; 1896, p. 562.)

This Parrot may prove to have a much wider distribution in the Philippines than is at present known, our discovery of the bird in North Luzon being a mere chance. At a distance it so closely resembles the common *T. luconensis* that one does not like to keep continually shooting at *Tanygnathi* in the hopes of obtaining a specimen now and then.

♂. Iris orange; bill rosy red; feet dull olive-brown.

♀. Iris orange; bill creamy white; feet dull olive-brown.

275. Bolbopsittacus lunulatus (Scop.). (Grant, Ibis, 1894, p. 410; 1895, p. 467; 1896, p. 124.)

This curious little Parrot is apparently confined to Luzon, where it is by no means rare; it is generally met with in neglected clearings and low forest.

276. Bolbopsittacus intermedius (Salvad.). (Grant, Ibis, 1897, p. 248.)

This species closely resembles the preceding, but the blue on the face and collar is always darker; in Samar and Leite it is common, inhabiting localities that are open.

277. Loriculus philippensis (P. L. S. Müller). (Grant, Ibis, 1894, pp. 410, 521; 1895, p. 264; 1896, p. 124.)

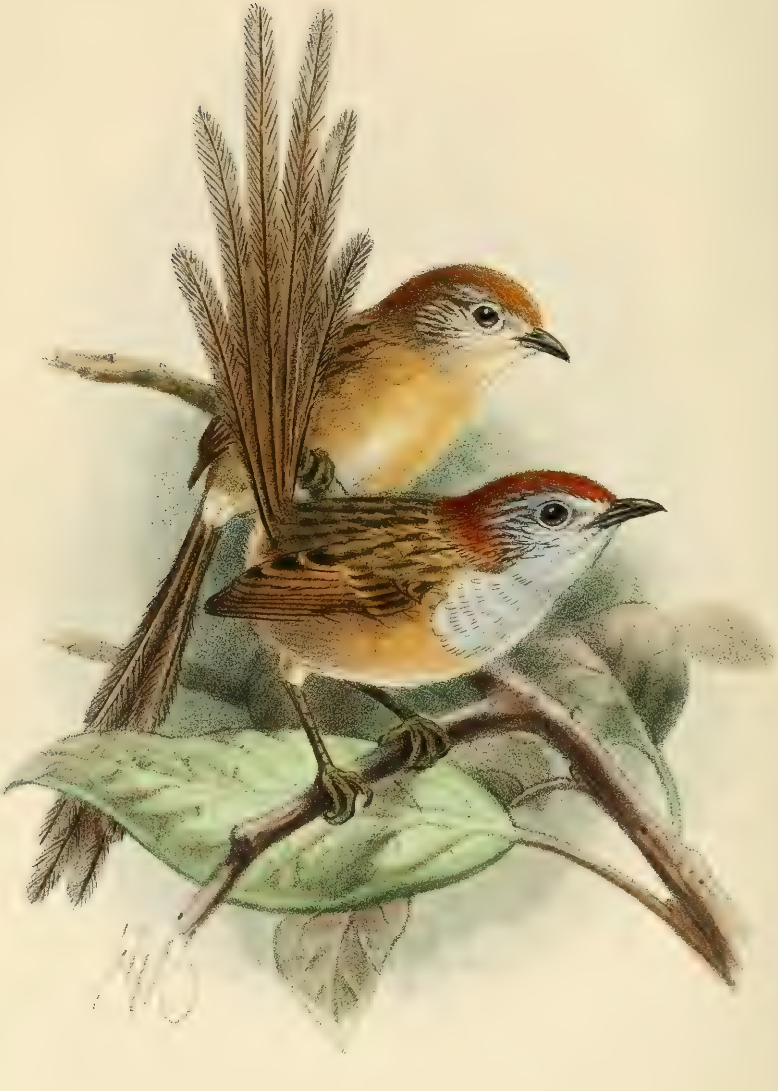
Loriculus is one of the most interesting Philippine genera, being found throughout the entire group, but differing in the various islands sufficiently to require no less than eight very distinct species to be formed of it.

L. philippensis was common in Luzon and obtained in Benguet at an altitude of 4000 feet. It is somewhat remarkable that no species of *Loriculus* inhabits the Palawan group, considering that the genus also occurs to the south in Borneo.

278. Loriculus mindorensis Steere. (Grant, Ibis, 1896, p. 476.)

Obtained by us in Mindoro.

Ibis 1899. Pl. VII.



J. G. Keulemans del. et lith.

Mintern Bros. imp.

STIPITURUS RUFICEPS

Iris dark brown; bill vermilion, tipped with black; feet deep orange.

279. Loriculus regulus Souancé. (Grant, Ibis, 1896, p. 562.)

From Canloön, Negros.

Iris stone-grey; bill vermilion, tipped with black; feet orange.

280. Loriculus worcesteri Steere. (Grant, Ibis, 1897, p. 249.)

This species was met with in Samar and Leite.

[To be continued.]

XXXIII.—*Description of a new Emu-Wren.*

By A. J. Campbell.

(Plate VII.)

The occurrence of a second species of *Stipiturus*, or Emu-Wren, in Australia will doubtless be of great interest to ornithologists. It is many years since Shaw described the original species.

On the 14th April, 1898, near the North-west Cape, Mr. Tom Carter shot a pair of the new Emu-Wrens, and on December 8th following procured a second pair in the same vicinity. Mr. Carter kindly forwarded a skin (of a female) to me, which I provisionally described as *Stipiturus ruficeps** before the Field Naturalists' Club of Victoria. At my request Mr. Carter has now forwarded a male, which fully confirms the new species—one of the smallest of Australian birds.

It differs from the ordinary Emu-Wren in its smaller size and in the richer colouring of blue upon the throat (of the male); the crown of the head is rufous brown, and the curious tail-feathers are not so filamentary or loose in structure as in *S. malacurus*.

Description.—Male. Forehead, crown of head, and neck rufous brown; rest of the upper surface brownish, with a dark stripe down the centre of each feather; side of face, throat, and chest cobalt-blue; rest of the under surface sandy or ochraceous buff.

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* See 'Victorian Naturalist,' vol. xv. p. 116 (1899).

Female. Similar to the male in general tone of plumage, except in the region of the throat, which is whitish or light buff instead of blue.

Dimensions in inches:—

Male. Length 5, wing 1·43, tail 2·9, bill 0·3, tarsus 0·6.

Female. Length 3·9, wing 1·4, tail 1·95, bill 0·3, tarsus 0·6.

Dimensions of *S. malacurus*:—

Male. Length 7·5, wing 1·6, tail 4·75, bill 0·35, tarsus 0·82.

Regarding the new species, Mr. Carter writes:—"I have seen thsee birds on only two occasions, and at the same place, namely, a stony ridge covered with dead scrub, matted with creepers, about 100 yards from a mangrove-creek (salt water), where I shot a male and a female on the 14th April, 1898. Almost in the same bush I shot another pair on the 8th December following. The birds creep about without flying, uttering a shrill trill or chirp, sharper than the note of a *Malurus*, and something like that of a cricket."

XXXIV.—*Notes on the Birds of North-west Fohkien.*

By J. D. D. La Touche, C.M.Z.S.

[Continued from p. 210.]

51. Silviparus modestus Burt.

Examples of this bird were obtained by our collectors at Kuatun in October 1896. We found it in April and May 1898, in the forest on the top of Mount David, where it no doubt breeds.

The testes of two males, shot on 11th April, 1898, were very large. The stomachs of some specimens contained caterpillars, seeds, and what appeared to be vegetable matter of some kind.

♂. Iris dark brown; bill livid plumbeous with dark tip;

legs purplish plumbeous. Total length: ♂, 3·9 and 4 inches; ♀, 3·8 inches.

52. Parus minor T. & S.

Common in North-west Fohkien, whence we have not as yet procured *P. cinereus,* a species not uncommon at Foochow.

A nest-pad and nine eggs were taken by our collectors at Kuatun on the 21st April, 1897. The pad has a foundation of moss, fine grass, and hair, over which are black (pig's ?) bristles and brown fibre mixed with moss. The upper part of the pad is made of animal fur and hair, with two or three downy feathers and a little moss added. The eggs are white, speckled or spotted with two shades of light red. Five of the eggs have large spots, one has specks and large spots, one or two have small spots, and one is very finely speckled. Seven of the eggs average 0·68 × 0·50 inch; the largest of these is 0·70 × 0·50 inch, the smallest 0·67 × 0·49. Of these seven eggs, four are somewhat pyriform ovate, two are ovate, and one is a long oval.

53. Parus venustulus Swinhoe.

Common in North-west Fohkien. A nest-pad and three eggs were taken by our collectors at Kuatun on the 1st June, 1896.

Two of the eggs are nearly oval in shape and measure 0·66 × 0·50 inch and 0·65 × 0·50 inch. They are white, with specks and small spots of a dark shade of "light red" over reddish-lilac spots. One of the eggs has a rough ring round the large end.

54. Parus pekinensis David.

While we were at Kuatun, this small Tit was to be met with in pairs in the woods above the village from about 4500 feet to nearly 6000 feet. It was, I have no doubt, breeding in a pine-wood near the top of Mount David. Our collectors shot it in winter in a valley near Kuatun.

In 'Les Oiseaux de la Chine' mention is made of the extreme tameness of this bird, Père David saying that even if fired at it will not fly away. I was told a bird-story at

Kuatun which, if true, further testifies to the fearlessness of our Chinese Coal-Tit. The story, as related before me by Kuang Liang, one of our best Kuatun hunters, is as follows:—Kuang Liang was watching one day a *Parus pekinensis* in a wood, when the bird flew down and perched on his gun, then fluttered about his game-bag, apparently trying to get in! The man who told me this was quite in earnest and did not in the least appear to be lying. When one considers the quiet ways of a native hunter, and that the time was the height of the nesting-season, the story does not appear quite incredible, and the suggestion of one of our Foochow men, that the bird was perhaps anxious to get some cotton-wool for its nest, perhaps explains its extraordinary behaviour.

The soft parts of specimens shot at Kuatun are: iris dark brown; bill blackish; legs dark leaden blue.

55. MACHLOLOPHUS REX David.

This handsome Tit is common in the mountains about Kuatun, descending in winter to the banks of the River Min, where our men shot some in December 1895. It had already paired when we arrived at Kuatun (29th March). It frequents woods and clearings alike, and we often saw it mixing with flocks of other small birds. This Tit is by no means a shy bird, and a fine male, which had no doubt a nest in the vicinity, used often to show itself on the bare branches of the magnolias that grew by the village. One of its spring calls is very loud and sounds like "kee quick-quick;" but, like other Tits, it has a variety of notes.

The soft parts of specimens collected are:—Iris dark brown; bill blackish brown; legs dark leaden blue. Total length: ♂, 6 inches; ♀, 5·55 inches.

I was told that the nest is built in holes in the ground, as well as in hollow trees. We have three clutches, all from Kuatun: one obtained on the 24th April, 1897, comprising three eggs; one of five eggs collected in the same year by the natives; and one of six eggs obtained on the 4th May, 1898. The third nest was taken from a hole in a tree. The female was brought to me alive with the nest and eggs. She bit fiercely when I was untying the string that bound her legs, and even when released pecked hard at my fingers before finally flying away.

The nest of this Tit is a mere pad; the one procured last is chiefly made of fir-flower scales, with the addition of a few bits of fur, a little moss, coir, black (pig's?) bristles, and a little bit of a snake's slough. Five of the eggs are of a rounded ovate, the sixth is not so broad. The ground-colour is pure white; the markings consist of spots and specks of two shades of red, one of which is very dark, over paler underlying spots of reddish lilac. There is little or no gloss. These eggs measure 0·70 × 0·56, 0·70 × 0·52, 0·69 × 0·56, 0·69 × 0·54, 0·67 × 0·55, and 0·67 × 0·53 inch.

56. Acredula concinna (Gould).

Noticed in pairs at Kuatun during April. Towards the end of our stay, one of the hunters brought us an empty nest which he said was that of this species. He had found young birds in it some time previously, and had seen the old birds feeding them, but when he revisited the nest it was empty. This nest is a strong ball of bright-coloured soft moss lined with feathers, and has a small hole as an entrance.

57. Sitta sinensis J. Verreaux.

There appear to be two races of the Chinese Nuthatch, a lowland and a mountain form.

The lowland form has a weak bill and small legs and feet, with a hind claw not exceeding 0·3 inch. The throat and cheeks are more or less white, the underparts are pure reddish, and the chestnut of the under tail-coverts is pale.

Two males from Kienyang and Pucheng, in North-west Fohkien, average: bill from gape 0·76 inch, wing 2·96, tarsus 0·70, hind toe 0·48, hind claw 0·28.

Three females from Wu Yi Shan and Pucheng average: bill from gape 0·75 inch, wing 2·88, tarsus 0·70, hind toe 0·45, hind claw 0·27.

I am indebted to Mr. Rickett for the three examples from Pucheng, all of which are beautiful skins.

The birds from the lower hills of North-west Fohkien are of this race, and the male type of *S. sinensis* Verreaux (a Kiukiang bird), and other examples in the Paris Museum from Chekiang and Kiangsi, also belong to it.

The mountain form is a larger bird with much larger bill and stronger legs, and with a hind claw of 0·3 to 0·35 inch.

The flanks are grey in newly-moulted autumn birds, this grey tint pervading the rest of the underparts in breeding birds. There is no white on the cheeks and throat, and the chestnut of the under tail-coverts is very dark.

Ten males from Kuatun average: bill from gape 0·83 inch, wing 3, tarsus 0·75, hind toe 0·53, hind claw 0·32.

Three females from Kuatun average: bill from gape 0·82 inch, wing 2·9, tarsus 0·73, hind toe 0·51, hind claw 0·32.

All my Kuatun Nuthatches belong to this race, and the male type of *S. sinensis* Verreaux, from Moupin, specimens from Yerkalo, and some from Chentu in the Paris Museum can also be referred to it. There are other specimens in the Paris Museum, also from Chentu, which appear to be intermediate, but the bad state of the skins prevented a satisfactory examination. Should these two races of *S. sinensis* ultimately prove to be as distinct as they now seem to be, I would propose to retain the name of *S. sinensis* Verreaux for the lowland form, and to distinguish the mountain or grey-flanked bird as *S. montium*.

The Chinese mountain Nuthatch is common in the woods about Kuatun. We took there on the 19th April a clutch of five eggs from a hole in a dead tree-stump about 35 feet high, the hole being near the top of the tree. This stump stood on the edge of a clearing in a pine-wood. The eggs were much incubated, the young being already covered with down. The shape of these eggs is ovate. They are white, spotted with red over well-marked underlying reddish-violet spots. The spots are more numerous about the large end of the eggs. The surface is somewhat glossy. They measure 0·74 × 0·55 (two), 0·73 × 0·55 (two), and 0·70 × 0·55 inch.

58. Liothrix lutea (Scop.).

This pretty bird is abundant about Kuatun and breeds there in numbers. We found the nest in dwarf bamboo jungle somewhat above the village, in the tea-plantations of the upper valley, and in the high forest on Mount David, where they swarmed. Three nests were taken on tea-plants, and many others on the dwarf bamboos of the high forest, while one was found on a tree in this forest about 15 feet from the ground. The nest is always slung on the twigs of the plant it is built on, generally at no great height from the ground—2 to 4 feet as a rule.

I saw a newly-built, but as yet empty, nest on the 15th April in the forest on Mount David, and on the thorny bushes that cover the very top of the mountain one or two old nests. The first nest with eggs (incubated) was found on 5th May, and others, nearly all with slightly incubated eggs, were taken on the 8th, 9th, 15th, and 16th May.

The nests are more or less deep cups, made of bamboo-leaves and sword-grass blades, bound exteriorly and wrapped in soft moss.

The lining of the nests found in the tea-fields was composed of fine brown grass-stems, coir, and fine roots, one having besides a few black fern-stems added. The forest nests are generally lined with coarse shining black tendrils or fern-stems. One of these had been so built that it was sheltered by two bamboo-leaves that formed a waterproof cover to it.

The average measurements of eleven nests are:—Inner diameter $2\frac{1}{4} \times 2\frac{1}{2}$ inches, some having this as small as $2\frac{1}{4}$ inches and $2 \times 2\frac{1}{2}$ inches. The depth of the egg-cavity varies from $1\frac{3}{4}$ to $2\frac{1}{2}$ inches. The average outer depth is about 3 inches, but this in one shallow nest is only 2 inches, while several show an outer depth of $3\frac{1}{2}$ inches The outer diameter varies from $3\frac{1}{2} \times 4$ to $4\frac{1}{2} \times 5$ inches. Very few nests are absolutely round.

The number of eggs in a clutch is also irregular, varying from two to four, three eggs being, however, the usual number. The shape of the eggs varies from a broad to an elongated ovate. The ground-colour is a pale greenish blue, sometimes greenish white. The markings are more or less irregular spots and blotches of more or less deep burnt sienna and lilac over underlying paler lilac spots and blotches, and are usually disposed about the large end of the egg. The natives state that the pale eggs are those of young birds, and that the old birds destroy their eggs if they notice that the nest has been discovered. The younger birds are believed not to do this. There is much variation in size, and short broad eggs are more heavily marked than the large elongated ones. The eggs of a clutch are all of the same type.

Thirty-one eggs of *Liothrix lutea* collected at Kuatun vary in length from 0·75 to 0·92 inch, and in breadth from 0·58 to 0·66. The three eggs of the longest clutch measure each 0·92 × 0·64 inch. The three eggs of the shortest clutch measure 0·75 × 0·61, 0·76 × 0·60, and 0·76 × 0·59 inch. The broadest egg measures 0·86 × 0·66 inch, and the narrowest eggs, a clutch of two, measure 0·86 × 0·58 and 0·80 × 0·58 inch.

59. Staphidia torqueola (Swinhoe).

This is about the commonest bird in the Kuatun Mountains. During April, large flocks, often joined by parties of *Yuhina pallida* and other small birds, were daily seen by us, and nearly every day a flock used to pass under our windows on its way up the mountain. The first indication we had of their approach was their loud twittering, and the birds would be seen on the bamboos below the village, whence they would fly down to the tea-bushes of the small plantation under the main path and gradually swarm over the neighbouring bushes and trees. They explored the trees busily, tearing off bits of bark and lichen, and held on to the branches like Titmice. When they had finished with the tea-field and the trees, they passed up the hill. Long after these birds had mated, large flocks were occasionally met with. This was generally during bad weather. The spring call is loud and trisyllabic, something like "chichi-wheet."

A live bird, brought to us with a nest, on being released and placed on a window-sill, did not fly away at once, but remained for some seconds quietly drinking some water that had accumulated there, then flirted its tail about and finally flew down into the valley.

The soft parts of this species are:—Iris dull dark crimson; bill dark livid pinkish brown; legs dull orange; feet tinged with brown.

Like *S. castaneiceps* (see Ibis, 1895, p. 219), this bird builds its nest in holes of earthbanks by the mountain-paths, hollows in the ground on a bamboo-planted hillside being also favourite situations.

Nests were reported to us as being built early in April, and on the 14th April I examined three of them in the forest. All three were in holes in the bank by the path. Two were empty as yet, while the third contained three eggs. The parent birds of the third nest were near with nesting-materials, and the hunters told me that the birds kept adding to their nests until the full clutch was laid. On the 17th April I took a nest, with five eggs much incubated, from a hole in a bank on a hillside sparsely planted with bamboos.

About eighteen nests were collected during our stay, the last, taken on the 19th May, containing fresh eggs. From the 14th April, however, to the above date, the degree of incubation of the eggs taken varied greatly, fresh and incubated eggs being often found on the same day. The nest consists of a more or less stiff cup, composed of very soft fibre, fine grass-stems or fine grass-roots, lined with coir, very fine curly black fibre or moss-roots, built within a rough outer cup of moss, pine-needles, bamboo-leaves, &c., which more or less fills up the cavity sheltering the nest, and which is therefore of rather irregular shape and size, according to the space to be filled up. The depth of the inner cup is 1½ inch, sometimes a little over, seldom less, its diameter varying from 2 to 2½ inches. A common diameter for nests that are not quite round is 2¼ × 2½ inches.

The full clutch consists of five eggs, but once a nest with six eggs was brought to me. The colour is a bluish china white, more or less thickly speckled or finely spotted with sepia-brown of several shades over light and dark grey underlying spots. Some clutches are very finely speckled. In one clutch collected by our men in 1897 there is a very broad ring, amounting to a cap in two of the eggs, of confluent spots and blotches. In most of the clutches the markings are most numerous about the large end of the egg, where they form a generally rough, but sometimes regular, ring. In a few cases there is a cap, and finely-speckled eggs have often a few large spots or sometimes blotches about the large end. The eggs of the same clutch are not always of the same type, there being often one or more eggs the markings of which do not resemble those of the others.

The shape is very variable, ranging from a regular ovate to a broad oval. A broad ovate with a broad rounded apex is the most usual shape. The texture is very finely shagreened, and the surface is glossy. Eighty-eight eggs average 0·73×0·54 inch; this does not include the eggs of an abnormally narrow clutch which measure 0·67 × 0·50, 0·68 × 0·51, 0·70 × 0·51, and 0·71 × 0·51 inch. The longest eggs (two) measure 0·76 × 0·56 inch, and the shortest (one) 0·65 × 0·55 inch. The abnormal clutch excepted, the variation in breadth is from 0·52 (one egg only) to 0·59 inch. The most common length is between 0·68 and 0·73 inch, and the most common breadth lies between 0·55 and 0·57 inch.

60. PTERERYTHRUS ÆRILATUS Tickell.

This handsome bird is common in the forests about Kuatun. I am sorry to say that I only saw it once, but I heard it several times. The call is a loud monotonous chirrup, something like "tiup-tiup-tiup-tiuptiup." The attitude when perched is very shrike-like. The food appears to consist of beetles, seeds, and caterpillars.

The soft parts of specimens shot at Kuatun are:—Iris black, with grey outer ring; upper mandible blue-black; lower mandible leaden blue; legs pinkish flesh; claws more or less dark reddish grey. Total length: ♂, 6·6, 6·7, 7 inches; ♀, 6·8, 6·9 inches.

Our collector took a nest of this Shrike-Tit on the 25th April, 1897. It was on a tree a short way above the village, and was slung between the twigs of a small fork at the extremity of a branch.

This nest is a shallow cup of triangular outer shape, made of fine tendrils or fine roots, with an outer covering of long silky moss and cocoon (or floss) silk of two or three shades of yellow. One or two little bits of lichen adhere to the base. The moss and silk are thickly wound round the twigs holding the nest, and round the sides of the cup, the base of which is of more or less open work, like the nests of *Chibia hottentota,* with only a slight wrap of moss under it. The inner depth is between 1½ and 1¾ inches. The inner diameter at the rim is regular, about 2½ × 3 × 3½ inches; under the edge of the nest it is 3 inches. The outer diameter at the rim is about 4½ × 5 inches.

Our men told us that there were four or five eggs in this nest, but that two or three were jerked out when the nest was taken. The two remaining eggs are slightly damaged. One of these, in Mr. Rickett's collection, is ovate, white, lightly speckled with dark and light brown over a few underlying grey spots. The markings form a narrow ring round the large end. The other egg is also ovate in shape, measuring 0·90 × 0·66 inch. It resembles Rickett's specimen, but it is more thickly speckled at the large end, the markings forming a thick zone, almost a cap. The texture of the egg is not very smooth when seen through a lens, but the surface is much polished.

61. Allotrius pallidus David.

This bird is probably a resident in the mountains of West Fohkien. We have a few examples shot at Kuatun in spring and autumn.

The male has the upper wing-coverts and the innermost secondaries washed with light bluish grey, and the outer secondaries and the primaries edged with the same. The side rectrices are also edged with grey, and the central rectrices are washed with the same colour. The throat and breast are of a much purer grey than in the female. Young birds have the tail and wings (primaries excepted) washed and edged with green, and have besides a good deal of green on the head and neck. The very young birds have probably the head and neck quite green.

The soft parts of the only bird (a female) procured during our visit to Kuatun are as follows:—Iris dark brown; upper mandible blackish; lower mandible leaden blue; legs greyish flesh. Total length 4·90 inches.

62. PNOËPYGA PUSILLA Hodgs.

This Wren is common about Kuatun. It is, however, seldom seen, hiding in the undergrowth or about the rocks on the banks of the mountain-torrents, whence its curious loud sibilant whistle, consisting of two notes, the first ascending, the next descending, may be heard. Our men told us that the call of the "U Kwei" (Black Devil), as this innocent little bird is called by the natives, is a sure sign of fine weather. We procured specimens on Mount David as high as 6000 feet. One example shot on the 12th April, 1898, has the underparts fulvous. It is a male, with the soft parts coloured as follows:—Iris dark brown; upper mandible blackish; lower mandible dark livid grey; legs greyish brown. Total length 3·6 inches. The stomach contained a tiny centipede and remains of small insects. Another male, with normal underparts, shot on the 19th April, 1898, measured in total length 3·65 inches. Its soft parts are similarly coloured, except that the whole bill is purplish black and the claws are paler. The gape is noted on the label as being flesh-coloured.

Three nests were discovered during our stay at Kuatun. One was reported to be building on the 14th April, but on a subsequent visit it was found to have been deserted. The second was shown to me on the 18th April. It was in a dark rocky nook near the stream below the village, and was built about 4 ft. from the ground on the perpendicular face of a rock. The aperture faced a little dark cave under the rocks a yard or two off. The brambles and bushes growing at the base of the steep wooded slope of the mountain made up the third side of this quiet corner. The hen bird was sitting when I approached the nest, and flew down to the little cave, where she hopped about under the rocks till she fell a victim to a badly-calculated shot which spoilt her as a specimen. There were three eggs in the nest, which I did not take till next day, when I found that they were on the point of hatching. On this second visit I found the male sitting. He behaved just like the female, but soon slipped away. I waited some time for his return, but as he did not appear I took the nest. On crossing the stream again to pick some flowers I found the male quietly hopping about on the ground under the rock where the nest had been, and secured him without damage.

This nest appears to have been made much in the same way as that described by Mr. Stuart Baker (Ibis, 1896, p. 322). It is a domed nest, made exteriorly of moss twined into the living moss that hung on the rock, a bag with a side-entrance having thus been formed. The inner part of the nest is of coir-fibre and is lined with fine brown grass-stems. As stated above, the aperture faced the cave, the sides being parallel with the rock. The top of the nest overlaps the entrance, and the structure was built over an old nest, the whole forming a mass eleven inches in length. The aperture is 2 inches high by 1½ inch broad. The distance from the base of the entrance to the base of the nest is 4 inches. The height inside is 3½ inches; the inner diameter 3 inches; and the depth of the egg-cavity is about 1½ inch.

The third nest was found some distance above the village, among the moss and grass covering the bank of a stream. This nest was just above the water, and was fastened to the living moss and grass growing *on the side of the bank*. It is an oblong domed structure, with the top of the nest overlapping the aperture, which faced up stream, and it is exteriorly made of moss and fine roots. The inner part is of fine brown grass-stems or coir-fibre and very fine roots. The aperture is 2 inches high by 1½ inch wide. The outer measurements are: length about 7 inches, depth (front to back) 4, width 3. The inner measurements are: height about 4 inches, diameter 3. The egg-cavity is about 2 inches deep. There were four white eggs, quite fresh. The hunter who was with me caught the female on the nest, but, as in doing so he had pulled out several quills of one wing, I released her.

Another nest with two incubated eggs was taken by our men on the 20th May, 1896. So far as I could make out, it was placed in the mossy crevice of a rock. This nest, which is perhaps only an inner cup, is a deep narrow cup made of fine grass-stems or fibre, a thick curl of short stiff grey bristles, and fine roots with a few dry leaves and skeleton leaves worked into the nest. There is a little moss about the edge, and the lining is of fine fibre. The inner diameter of this nest is $1\frac{1}{2} \times 3$ inches, the outer diameter $2\frac{1}{2} \times 4\frac{3}{4}$; the depth of the egg-cavity 2 inches, the outer depth $3\frac{3}{4}$ inches.

All the eggs taken with these nests are pure white, very fragile, and glossless. The shape of the four eggs taken on the 24th April, 1898, is nearly oval (or ovate with very round and broad apex). They measure 0·70 × 0·52 (two), 0·68 × 0·54, and 0·67 × 0·53.

63. ELACHURA PUNCTATA (Blyth).

Anorthura, sp. inc., Slater, Ibis, 1897, p. 174.

This pretty Wren is not common at Kuatun. Besides the headless example recorded by the Rev. H. H. Slater, two males were collected near Kuatun on 27th and 28th April, 1897. We did not obtain any on our trip, but one was seen by the hunters creeping about the underwood near the stream a short way beyond the village.

64. MOTACILLA LEUCOPSIS Gould.

This Wagtail breeds in May on the hills near Foochow (alt. 1000 to 2000 feet), and also at Kuatun (3000 to 4000 feet). The nest is placed on the roofs of houses, among the thatch or under a tile, in holes of walls, and on rafters in open sheds. The nest is a large cup composed of some of the following materials :—straw, grasses, moss, dead and skeleton leaves, feathers, and coir, and is thickly lined with wool or hair.

A nest taken in Peling (near Foochow) on the 13th May, 1897, measures: inner diameter about 3½ inches, inner depth 1¼; outer diameter 7, outer depth 2¼. It contained three fresh eggs. Another, taken in the same locality on the 16th May, 1897, had two fresh eggs. Both these clutches were, of course, incomplete. A nest was taken at Kuatun on the 15th May, 1897, with five fresh eggs, and one at Upper Kuatun on the 5th May, 1898, with four incubated eggs. The inner diameter of this latter nest is a little over 2¾ inches; the inner depth is 2 inches. Two of the eggs, taken in Peling on the 13th May, 1897, are greyish white, so thickly speckled and streaked with pale brown over grey underlying marks as almost to conceal the ground-colour; their shape is a broad ovate. The third egg is ovate, attenuated at both ends, and its markings are darker and not so numerous. These eggs measure 0·80 × 0·60 (two) and 0·78 × 0·60 inch. The clutch obtained at Kuatun on the 5th May, 1898, has a very different appearance. The ground-colour is also greyish white, but the marks are of a darker brown and of a violet-grey. The spots are fewer in number and larger, and all four eggs have a cap, which in one egg is very dark. These four eggs are ovate in shape and measure 0·80 × 0·59, 0·80 × 0·58, 0·78 × 0·60, and 0·78 × 0·59 inch.

65. ANTHUS MACULATUS (Hodgs.).

Specimens were obtained at Kuatun on this and on previous trips. It no doubt winters in the lower valleys.

66. ANTHUS RICHARDI Vieill.

We have two skins of this Pipit, labelled Kuatun, 1st and 5th May, 1897.

67. LIMONIDROMUS INDICUS (Gm.).

A single specimen was shot in a pine-wood in the valley below Kuatun on the 20th April, 1898. It is a male: iris brown; upper mandible blackish; lower mandible pinkish, with dark tip; legs dark flesh. Total length 6·85 inches. Wang Wang shot one at Swatow on the 25th April, 1887. We have not as yet noticed this bird at Foochow.

68. Oreocorys sylvanus (Hodgs.).

Corydalla kiangsinensis Dav. & Oust. Oiseaux de la Chine, p. 311, pl. xxxvii.

Rhabdochlamys dejeani Oust. Bull. Mus. Hist. Nat. 1897, no. 6, p. 208.

The comparison of several specimens of *O. sylvanus* shot in Fohkien with the type of *C. kiangsinensis* shows the latter to be a very dark example of the former species. It was shot in August and is probably a young bird. There is also no doubt that *Rh. dejeani* is the same, as examples of this bird cannot be distinguished from our specimens of *O. sylvanus*. *O. sylvanus* therefore proves to be somewhat widely distributed in China. It is doubtless a resident on the hills of Fohkien, and it is not uncommon on the grass-lands above Kuatun.

♂. Foochow, 14.2.96. Iris dark brown; upper mandible livid purple; lower mandible pinkish flesh, with dark point; mouth and gape yellow; legs light flesh. Total length 7·25 inches. The stomach contained a grasshopper and small insects.

♂, Kuatun, 1.4.98. Iris dark brown; upper mandible dark livid brown; lower mandible pinkish, with dark point, its base and the gape yellow; legs flesh. Total length 7·55 inches.

69. Pycnonotus sinensis (Gm.).

We obtained at Kuatun three examples of this lowland species. It is, however, a rare bird up there, only a few coming up from the lowlands for the breeding-season. One of the specimens obtained on this trip has the white of the head divided down the centre of the occiput by a single black feather.

70. Pycnonotus xanthorrhous Anderson.

A few examples were shot by our men near Shaowufu in December, 1895.

71. Pycnonotus atricapillus (Vieill.).

This Bulbul appears to straggle as far north as North-west Fohkien. I have a specimen from there dated October 1896.

72. Hemixus canipennis Seebohm.

This bird is common among the wooded hills of Central and North-west Fohkien. It is abundant about Kuatun. We noticed small flocks, as well as paired birds, at the beginning of April, and on the 5th May I saw a bird carrying nesting-materials. I was unable to find any nests during our stay, but a nest and eggs, taken in 1897, said to belong to this bird, were sold to me on our arrival at Kuatun.

The nest is a cup, composed chiefly of soft moss. The inner diameter is 2·8 inches, the depth of cup 1·6, the outer diameter 3·8, and the outer depth 2·2*. The eggs, three in number, are very beautiful. Two are exactly ovate, and one is slightly elongated ovate. The ground-colour is a red-pink, or "old pink," and the markings consist of spots and bold blotches of pale and dark carmine over violet underlying blotches, with short hair-lines of dark carmine over the carmine blotches. One egg has an irregular ring round the large end, and one has the crimson blotches rather paler, these forming a cap, which is prolonged in a broad irregular blotch extending on one side over its whole length. They measure 0·98 × 0·65, 0·96 × 0·68, and 0·95 × 0·66 inch.

73. Spizixus semitorques Swinhoe.

We saw a flock of this species feeding on a tree near the river on the 23rd March, 1898, and found it common at Wu Yi Shan. Three shot on the 23rd March had their stomachs crammed with green-stuff—seeds or buds of the tree they had been feeding on. I do not think that this Bulbul occurs at Kuatun.

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* I am indebted to the officers of the British Museum for these measurements, as well as for those of the nests of *Hypsipetes leucocephalus* and *Cryptolopha sinensis* obtained in 1898 at Kuatun, these nests having been sent, unmeasured, to London.

74. IOLE HOLTI (Swinhoe).

This Bulbul is very common about Kuatun. It was breeding, I think, during the latter part of our stay, but we could not find the nest. The natives say that it is a late breeder.

75. HYPSIPETES LEUCOCEPHALUS (Gm.).

This bird comes to the Kuatun Mountains for the breeding-season. In 1898 it first appeared towards the latter end of April. A pair settled about the village, and other couples were often met with in the neighbourhood, while flocks would be seen flying swiftly high overhead from one mountain to another. Our collectors brought us two nests, each with three eggs, in 1896. One nest was taken at the end of May and the other at the beginning of June. The latter nest is a compact and fairly strong shallow cup, made of strips of bark, coarse grass, and moss, on a foundation of moss. It is lined with pine-needles and a strip or two of sword-grass. The inner diameter is $2\frac{3}{4} \times 3$ inches, the inner depth about $1\frac{1}{4}$, the outer diameter $4\frac{1}{2} \times 5$, and the outer depth about 2. The eggs of this nest are of elongated ovate shape. The ground-colour is a very pale mauve, and they are spotted all over with very dark brownish carmine over dark and light lavender-grey. The spots are more numerous about the large end. The texture is somewhat glossy. These eggs measure $1{\cdot}20 \times 0{\cdot}73$, $1{\cdot}15 \times 0{\cdot}71$, and $1{\cdot}15 \times 0{\cdot}70$ inch. The eggs from the other nest are ovate. Both clutches are very large editions of the eggs of *Pycnonotus sinensis*. Another nest with three eggs, taken in 1897, was sold to me on our arrival at Kuatun as the nest and eggs of *H. leucocephalus*.

These eggs are so different from those obtained by our men in 1896 that, did I not know the Kuatun men and our collectors to be so careful in their statements, there would be reason to think that a mistake had been made somewhere. The ground-colour is *pink*. The spots are large and few in number, and are chiefly disposed about the large end; they are of the same brownish carmine as in the first two clutches, and the underlying spots are also of a lavender-grey. These eggs are a large pink edition of the eggs of *H. nigerrimus* obtained in North Formosa and described in 'The Ibis' (1898, p. 365). In shape they are a slightly elongated ovate, and they measure 1·13 × 0·75 (two) and 1·11 × 0·77 inch.

The nest has an inner diameter of 2·90 inches, with an inner depth of 1·7; the outer diameter is 4 inches, and the outer depth 2.

76. YUHINA PALLIDA La Touche.

The soft parts in this species are:—Iris dark crimson or brown; upper mandible blackish; lower mandible and sides of base of upper mandible dark vermilion; mouth and tongue red, the tongue deeply forked and brush-tipped; legs dull orange, the feet tinged with dark grey. Total length: ♂, 4·9 and 4·7 inches; ♀, 4·7 inches.

This bird is extremely common about the Kuatun Mountains during spring, summer, and autumn. It frequents the valleys and the planted hill-sides, and is found in the forests as high as the summit of Mount David, where we met with it paired in May. I fancy that during the cold weather it must either go south or retire to the lower valleys of the high ranges of Western Fohkien. During the early part of April, and even occasionally after that, we saw large flocks in the valleys or working their way up the mountains. They often joined a flock of *Staphidia torqueola*, other small birds, such as *Cryptolopha ricketti* and Willow-Warblers, being also found in their company. I have seen these birds feeding on the ground at the foot of trees. Like many other small birds of sociable habits, they appear to be distressed at the loss of their companions, as one that I shot out of a flock on the 31st March was followed to the ground by another, screaming and showing great grief.

From about the 11th April we saw this *Yuhina* in pairs, and the song of the male was to be heard everywhere. The song is a peculiar whistle, very loud, each note very distinct and slow. It consists of five or six notes, the first two being often repeated hesitatingly before the songster ventures on the next notes. The song gives one the idea of some one practising a scale on some musical instrument. The last note has a deep sound like that of the bass string of a violoncello. The nest, like that of *Yuhina nigrimentum* described by Mr. Stuart Baker in 'The Ibis' for 1895 (p. 221), is a cradle suspended generally under the moss-grown branch of a tree, sometimes on a palm-tree : I saw one slung under and attached to the bamboo-thatch under the eaves of a shed for storing bamboo-fibre or -skin. The day before we left some tea-pickers brought us two nests with young, which they said they had found suspended from twigs of tea-plants. The bird is so shy and wary at the nest that to obtain the parent birds with the eggs is a matter of great difficulty. If the nest be only touched the bird will forsake it. Thus the nests found by the native hunters proved on subsequent visits to have been deserted. The first shown to me was slung under the moss-covered branch of a small tree that grew out of the perpendicular face of a rock, just over a pool in the torrent below Kuatun. This nest contained four eggs—the full clutch, no doubt. When we took it, on the 2nd May, it had been deserted for some days. Another nest that I saw was slung under the lowest branch of a tree, towards the extremity of the branch, and was about 15 feet from the ground. This tree stood on a hill-slope, in the midst of a lightly-planted bamboo-grove. An old nest was also shown to me on a palm-tree (*Chamærops excelsa*), among the coir-fibre at the base of the leaf-stems. These nests, together with that above mentioned, found under the eaves of a shed, are the only nests I saw *in situ*. Only the first-mentioned nest contained eggs. The remains of a nest, with the parent bird and fragments of the eggs, were brought to me on the 2nd May by Chunkai. This nest was placed in a very difficult position, and while taking it the branch broke and all the eggs were smashed.

Our collectors were more lucky on their previous expeditions. In 1896 they brought one nest with four eggs and the parent bird, and in 1897 two nests with one and three eggs.

The nests of *Yuhina pallida* that I have seen are all of the same build and composed of the same materials. They are cradles of moss and moss-roots, with an inner cup or lining of coir or other fibre and fine rootlets. The nest with eggs taken on the 2nd May, 1898, is a stout little cradle of moss, with a lining of coir-fibre and fine roots. A tail of moss and small roots hangs from its base. The entrance is at either end of the cradle and is 1 inch in diameter. The egg-cavity is about 1½ inch deep, with a diameter of about 2 inches; the outer diameter is 4 inches longitudinally and 3 inches in width; the outer depth of the nest, hanging moss excluded, is about 2 inches.

The eggs of this nest are of a very pale and rather dull sea-green, speckled with pale brown over a few underlying violet spots. In two of the eggs the spots form a cap, the centre of the large end being lightly spotted, and the other two have an irregular ring. Other spots and very pale streaks are thinly distributed over the whole egg. The ground-colour of one of the eggs is much brighter than that of the others, and the spots are much better defined; it is the largest of the four. The shape of these eggs is ovate, inclining to oval, the apex of one egg in particular being very broad and round. They measure 0·68 × 0·50, 0·66 × 0·50, 0·64 × 0·50, and 0·62 × 0·50 inch. The ground-colour of two of the eggs taken on the 20th May, 1896, has much faded. It was originally a light green, but it is now a dull light yellowish or brownish green. The markings on one egg consist of small lines and specks of light reddish brown distributed all over the egg; the specks on the other egg are darker. There is no trace of a cap or ring. The eggs are ovate in shape, and measure 0·64 × 0·48 and 0·62 × 0·48 inch. The eggs of the third clutch in my collection, taken on the 22nd May, 1897, have the ground-colour light bluish green, which appears very bright when the eggs are placed beside the other eggs just described. They are speckled or spotted, chiefly about the large end, with pale brown over underlying reddish-grey spots. In shape one is ovate, another rather broad ovate, and the third is very round and globular. They measure 0·65 × 0·51, 0·62 × 0·51, and 0·60 × 0·51 inch. The texture of all these eggs is smooth and glossy, and, when seen through a lens, very finely shagreened.

77. BUCHANGA LEUCOGENYS Walden.

A pair seen on the 5th May at Kuatun.

78. CHIBIA HOTTENTOTTA (Linn.).

I have a specimen labelled Kuatun, 27th April, 1897, and another obtained in the same neighbourhood on the 30th September, 1896.

79. CAMPOPHAGA MELANOPTERA (Rüpp.).

We have no skins from Kuatun, but specimens were shot on the 5th May, 1896, in the Kienyang district.

80. PERICROCOTUS GRISEIGULARIS Gould.

This pretty Minivet is abundant from March to November in the Kuatun Mountains. One or two were shot in the village during our stay; they were in company with other small birds.

A young male, dated Kuatun, 17th September, 1896, has a few nestling-feathers on the head. These are light brownish grey, with subterminal dark border and white edge. A single feather on the shoulder has also these dark and light bars, and a feather of the upper tail-coverts has a black subterminal edge, with a yellowish-green tip. Thus in the nestling the head and upper back are barred with dark grey and white, and the green lower back, rump, and upper tail-coverts are barred with black and light yellowish green.

We have one nest of this species from Kuatun, taken by our collectors on the 8th May, 1897. It was placed on the branch of a pine-tree. It is a small cup, with thin sides, made of a kind of filiform lichen, a few pine-needles, and a kind of greenish flat lichen with finely scalloped edges, reddish brown underneath, with hairy black roots. The nest is completely plastered outside, and partly inside, with this latter material, only a bit or two of moss being added, and has in consequence a peculiar black-and-green appearance. It is bound and held together by cobwebs. The inner diameter is about 2 inches, the outer diameter 3; the inner depth is about $1\frac{1}{4}$ inch, and the outer depth $1\frac{3}{4}$.

There were three eggs, very round or broad ovate in shape, one being nearly oval. They are of a pale greenish stone-colour, and have a broad ring of dark and light brown specks and round spots over larger and more irregularly-shaped underlying markings of dull brownish grey and blue or purplish grey of several shades. Other spots are sparsely distributed over the rest of the egg. In one of the eggs the ring is round the large end; in another it is round the small end, and the spots are smaller and fewer. The third egg I have no longer by me, but it resembles, so far as I can remember, the former of the two just described. These eggs measure 0·74 × 0·60 and 0·73 × 0·60 inch.

81. Pericrocotus speciosus Lath.

This appears to be the most uncommon of our Fohkien Minivets. Père David obtained or saw it at Kuatun, but as yet we have it only from the hills of Central Fohkien, where it would seem to be a resident species.

82. Pericrocotus cinereus Lafresn.

This Minivet passes through Fohkien on migration, but it is not common. We have specimens taken at Foochow in April, September, and October, and others from Kuatun dated 11th and 17th April, 1897.

83. Pericrocotus cantonensis Swinhoe.

Our collectors shot specimens at Kuatun in September and October 1896. One of these, a male, dated 13th October, 1896, has the longest upper tail-coverts broadly edged with light yellowish green. The underparts are whiter than in Foochow specimens; the rest of the colouring resembles that of an autumn bird from Foochow in my collection.

84. Lanius lucionensis Linn.

A pair was shot at Kuatun in May 1897, and we obtained an adult male on the 6th May, 1898. We also brought back two immature examples collected by the natives in 1897, probably during the autumn migration.

85. Lanius superciliosus Lath.

Two adult males were shot at Kuatun on the 6th and 16th May, 1898.

86. Lanius tigrinus Drapiez.

An adult male was shot by our collectors at Kuatun on the 11th May, 1897.

87. Alseonax latirostris (Raffl.).

Shot at Kuatun in April and May 1897.

88. Hemichelidon sibirica (Gm.).

This Flycatcher is very abundant in May on the Kuatun Mountains. Specimens were also shot there in September and October 1896.

89. Muscicapa griseisticta (Swinh.).

One example from Kuatun.

90. Poliomyias luteola (Pall.).

Common about Kuatun in April and May. We shot one on Mount David at an altitude of 5500 feet. It has also been obtained there in October by our collectors, and in Central Fohkien during November.

The occurrence of this bird at Foochow in November 1885 must have been exceptional, as we have not since then obtained or noticed it in that locality.

91. Tarsiger cyanurus (Pall.).

Winters at Kuatun.

92. Siphia brunneata Slater.

This new species, which passes the summer at Kuatun, was, according to our men, very uncommon during their previous visits to these mountains. In 1898 it was apparently plentiful, and we obtained nine specimens. It arrives rather late, the 6th May being the date on which the first specimen was shot in 1898. The bad weather during the month of May prevented me from visiting a mountain near Kuatun, well covered with forest, where this bird was most abundant, but I obtained the following information from the native hunters and our collectors. They know the bird by the name of "Chi-o-hay," a name supposed to represent one of its calls. It is a very shy bird, and keeps to the thickest bamboo-undergrowth in the forests. It is not found above 3500 feet. We heard one calling from the thick jungle on the forest-covered ridge facing the village, and on our way back from Kuatun we heard several singing in the woods by the path. It has, I believe, a variety of calls. Those which I noted down on the return journey are a slow whistle of four notes, "tootoo-titi," and another of six notes, "tütütütütiti." The hunters say that when the bird is aware of danger it changes these calls to one resembling its local name.

The colours of the soft parts in this Flycatcher are as follows:—Iris brown; upper mandible brown, paler at the tip, or blackish; gape, edge of upper mandible to beneath the nostril, and lower mandible yellowish or orange-flesh; legs pale pink. Total length, ♂ 6·10 to 6·60, ♀ 6·40 inches; wing, ♂ 3·10 to 3·22, ♀ 6·05 inches.

The plumage differs only in the greater or lesser amount of grey-brown on the breast. A few have the tertiaries tipped and edged with pale fulvous, these being probably young birds of the previous year. The under tail-coverts are sometimes nearly pure white, sometimes strongly tinged with pale fulvous.

93. Niltava sundara Hodgson.

A few examples of this handsome Flycatcher have been obtained by our men at Kuatun. The only place, however, where they found it was in one particular spot on Mount David at about 5500 feet altitude. We obtained two males during our stay, particulars of which are as follows:—

♂, 11.4.98. Iris dark brown; bill black; legs dark purplish. Total length 7 inches. Testes 0·35 inch long. Stomach contained small beetles and bits of transparent yellow skin (caterpillar?)

♂, 12.4.98. Total length 6·8 inches. The stomach contained beetles and the green and black skin of some larva.

94. Niltava cyanomelæna (Temm.).

This Flycatcher has been obtained about Kuatun by our men in April, May, September, and October. The different changes of the male plumage are well illustrated in a series of adult and immature males collected in North-west Fohkien and at Foochow.

95. Xanthopygia narcissina (Temm.).

Obtained near Kuatun in April and May.

96. Xanthopygia tricolor Blyth.

This is an uncommon migrant in Fohkien. Two or three have of late years been shot at Foochow. We obtained a beautiful male shot near Kuatun on the 25th April, 1898. The hunter who shot it said that he saw six or seven that day, but he had mistaken this species for the preceding one, and let them go, thinking we had enough specimens.

97. Cryptolopha tephrocephala (Anderson).

Two male examples from Kuatun, shot on the 30th May, 1896, and 15th April, 1897, have been identified at the British Museum as being of this species. The bill from the gape measures 0·58 and 0·60 inch, and the wing 2·25 inches. Another faded bird from the same locality appears to be of the same species. I did not procure any on the last trip to Kuatun. Mr. Ogilvie Grant, after examining my series of Flycatcher-Warblers, informed me that none of them were typical *C. tephrocephala*, so that perhaps this species will have to be taken off our Fohkien list.

98. Cryptolopha intermedia La Touche.

Thirteen examples vary in length of wing from 1·98 (♂ type) to 2·43 inches. The bill, measured from the gape, varies from 0·52 (♂ type) to 0·58 inch.

The soft parts of two males shot at Kuatun on the 11th April, 1898, are:—Upper mandible brownish; lower mandible yellow; legs dark yellow. Total length 4·9 and 5·1 inches. The stomach contained flies. Testes developing.

The soft parts of a female, shot at Kuatun on the 31st March, 1898, are:—Iris very dark brown; upper mandible brown; lower mandible yellow; legs greenish flesh. Total length 4·4 inches. The stomach contained small beetles.

Another female, shot on the 6th April, 1898, had greenish-yellow legs, faintly tinged with purple.

These Flycatcher-Warblers are common in the forests about Kuatun in the spring. We have also specimens shot there in September. They do not appear to frequent the cleared land, nor did I ever notice them among the flocks of small birds that we saw roaming over the country. They are shy birds, and, although I often saw or heard them, I did not shoot one myself. We did not find the nest.

The specimens of "*Cryptolopha affinis*" recorded in 'The Ibis,' 1892, p. 425, as shot near Swatow in February 1889, were, no doubt, of this species.

99. Cryptolopha burkii (Burton).

This is the least common of the Flycatcher-Warblers at Kuatun. It occurs there from spring to autumn. I never met with it myself, and only a few have been shot on the various trips to North-west Fohkien. While we were at Kuatun about eight specimens were obtained, one of which has some feathers of the vertex partially grey.

100. Cryptolopha ricketti Slater.

This new species is abundant at Kuatun in the breeding-season. Its habits appear to differ from those of the preceding three species. We noticed it among flocks of *Yuhina pallida*, *Staphidia torqueola*, and other small birds in cultivated or open spots, but there were never more than two or three individuals in any one flock. It perches frequently on solitary trees in clearings or cultivated ground, and I shot specimens in the bamboos about the village.

There is always some, and generally a good deal of grey mixed with the yellow and green of the central head-stripe, and the flanks are strongly tinged with green. The soft parts are as follows:—Iris dark brown; upper mandible more or less dark brown, the edges of its base generally yellow; lower mandible yellow; legs pale lead greenish, washed with purple and greyish flesh. Total length 4·4 inches.

Our men found a nest with eggs in 1896, but the eggs were broken and the nest was a mere relic when it reached

reached us. In 1898 we had better luck, and on the 3rd May the collectors found a nest with eggs, which they brought me with the parent bird. It was found in a hole in an earth-bank by a path on the edge of a forest. This nest is a roundish mass of moss, with a small side-entrance, and resembles the nest of *Cryptolopha sinensis.* It is, however, not so deep inside. There is no lining. The outer measurements are 5 inches high by 4½ broad, and 3 inches in depth from front to back. The inner measurements are: diameter 1¾ inch, depth of egg-cavity about 1 inch, height about 2 inches. The eggs, six in number, were somewhat incubated; they are pure white, with a slight gloss; the shape is ovate, with pointed apex. Two measure 0·63 × 0·47 inch, and the four others 0·60 × 0·47 inch.

101. Cryptolopha sinensis Rickett.

The soft parts in this species are:—Iris dark brown; upper mandible dark or light brown; lower mandible yellowish, tipped with brown; legs greenish yellow. Total length: ♂, 4 inches; ♀, 3·8 and 3·95 inches.

This pretty little bird is very common about Kuatun. It had already paired when we arrived, at the end of March, and its song, a loud and shrill "chichichi-chichi," was one of the most common bird-calls of the country-side. The songster himself was not to be seen, as a rule, except by the sharp-eyed native hunter. We generally met this little bird in underwood on the outskirts of forests, in hedges, and in patches of brushwood in open ground. The nests were being built at the beginning of April. I took the first on the 14th April. The eggs were quite fresh, and during the rest of our stay we took fresh eggs till the 16th May. A few taken between these dates were incubated.

The nest is placed under a hollow bank among the clods on the unearthed roots in the vault of the bank. It is always built well inside, out of sight. Generally the bank chosen is that by a stream; but we have taken nests from hollow banks some distance from running water. One taken in a valley near Kuatun was by the side of the public road. The bird will sit pretty close, and is easily captured by placing one's hand quietly and quickly before the entrance-hole. The nest is a more or less rounded matted mass of moss and very fine roots, with a small side-entrance. The outer shape of the nest varies according to its surroundings, and is either roundish, oblong, or quite irregular, often of greater depth (from front to back) than height; but inside it is nearly always the same, the egg-cavity being deep, with a rather small diameter. One nest had the upper part somewhat overlapping the aperture; but as a rule this is quite clear, and the little head of the sitting bird framed in the tiny window, as she looks at you with her large bright eye, is one of the prettiest sights imaginable. The average measurements of eight nests are, outwardly, 5·45 × 3·40 inches, with a circumference of 11·80 inches. The average inner height is 2·8 × 1·6 inch in diameter. The aperture in three nests is 1 inch high by 2 broad, in one 1·25 inch high by 1·75 broad, and in another 1 inch high by 2 broad. The length of this entrance-hole, which is dependent on the thickness of the walls, varies somewhat. In one nest it is as much as 2·25 inches, in another 1·75 inch. In a third nest the distance from the entrance to the inner back wall is only 2·5 inches.

The full clutch generally consists of five eggs, but sometimes I have taken a nest with four incubated eggs. The eggs are pure white; the texture is smooth, with a very slight gloss. The shape is variable; an exact ovate is perhaps the most common, but I have a clutch in which three eggs are oval; the eggs of another are a very broad ovate, and one clutch, taken by our men in 1897, consists of four almost globular eggs. The eggs of a clutch are generally all of the same shape.

Four clutches, in which the eggs (one excepted) are ovate, the exception being a somewhat elongated ovate, average each 0·60 × 0·45, 0·55 × 0·45, 0·55 × 0·43, and 0·54 × 0·45 inch. A clutch of globular or round ovate eggs averages 0·535 × 0·48 inch; one of three oval and two ovate eggs averages 0·53 × 0·43 inch, and one of broad ovate eggs averages 0·53 × 0·45 inch. The eggs in each clutch vary but little among themselves in size. Those of the large clutch are all of the same size.

102. Cryptolopha fulvifacies (Swinhoe).

This little bird is abundant about Kuatun. It was going about in pairs during the whole of our stay, and its melancholy and shrill cry, "dree," was to be heard all over the country in or close to bamboo-groves and plantations. It is a confiding little creature, fond of the neighbourhood of hamlets, and, as it makes its nest in holes of bamboos, readily adopts the nest-holes which the wily Celestial cuts for it in some old piece of bamboo planted in a convenient corner.

I took the first nest of this bird on the 27th April. It was in an old bamboo-stump, stuck upright in the ground, which had originally supported a pole for bamboo-strips. The hole in this bamboo was about 3 feet from the ground. Both sides of the bamboo had been cut open, the division below it broken through, and in the hollow of the joint, just under the circular side-openings, the little bird had made its nest. It was as much as I could do to dislodge the owner; she sat so close that, although I caught hold of her by the tail and lifted her twice off her eggs, she dropped down again at once. At the third attempt I caught hold of the wings as well, drew her out carefully, and, after satisfying myself as to her identity, released her, when she flew to a neighbouring bamboo and chattered at us for some time. There were six eggs, slightly incubated.

The nest is composed of bamboo-leaves set upright round the hollow, and has a lining of coir-fibre. The depth from the bottom of the nest to the opening is 3 inches, the bamboo-leaves reaching the broken-in section of the bamboo. The diameter of the nest is about 2 inches.

Another "trap-nest," placed among the bamboos just below the hunter's house by a Celestial of tender years, surnamed by us the "Money-grabber," had its full clutch of six eggs on the 4th May, and I obtained four other nests of the same kind on the 17th and 19th May with five, five, five, and four eggs respectively.

Our collectors brought back three clutches in 1897, dated 18th April and 5th and 7th May, and another was taken by the natives after their departure and sold to me on our arrival at Kuatun. I could not find a proper *wild nest*, i. e. a nest built otherwise than in an artificially made nest-hole.

The ground-colour of the eggs is a very light reddish pink or pinkish white (pale salmon-colour before blowing). The markings are longitudinal spots, short streaks of irregular width, or small blotches, generally more numerous round the large end, where they are often confluent and form a usually well-marked ring, the rest of the egg being but lightly spotted. In one clutch, however, and in three eggs of another, the ground-colour is so dark as to be a pronounced "old pink," especially in the latter eggs, one of which is very dark indeed, only marked with irregular short lines not much darker than the ground-colour itself. The colour of the surface-marks is a crimson-vermilion, more or less deep, and more or less dulled by the violet-grey blotches which occur chiefly about the larger end of the egg. The general shape is a more or less broad ovate. One egg in my collection is abnormally long, and it has the bulk of its colouring about the apex. It measures 0·60 inch by a little over 0·40. The 28 other eggs that I have range in length from 0·57 inch (one egg) to 0·52 inch (seven eggs), and in breadth between 0·45 inch (one egg) and 0·41 inch (nine eggs). They average 0·54 × 0·42 inch.

103. TERPSIPHONE INCII (Gould).

We obtained a female on the 6th May, and a white-plumaged male in the forest on the summit of Mount David on the 9th May.

104. TERPSIPHONE PRINCEPS (Temm.).

I have a young bird of this species obtained at Kuatun in October 1896, and three other young birds shot in autumn at Foochow. The only adult specimen as yet obtained is the male recorded by Mr. Rickett (Ibis, 1894, p. 221).

105. HIRUNDO GUTTURALIS Scop.

A few Swallows appeared at Kuatun towards the middle of April while we were staying there, and one even entered our open sitting-hall and flew round, apparently looking for a suitable corner on which to attach its nest. None, however, remained to breed. I have two examples from Kuatun dated 21st April, 1897, and 20th April, 1898.

106. Cotile riparia (Linn.).

The Sand-Martin is not uncommon on the River Min and its affluents. We have nests and eggs taken in February on the Yungfu river. Our collectors shot a few near Shaowufu at the end of November 1895.

107. Chelidon cashmirensis Gould.

A colony of these Martins nests every year on a precipitous rock on the S.W. slope of some mountains near Kuatun. I visited the place on the 16th May, 1898. The colony was not numerous, and many of the birds were busy feeding their young, so that we only shot a few that we wanted for specimens. Only one pair had built its nest within reach. This had been taken and brought to me on the 27th April, and a scaffolding built up under the rock indicated the spot whence, the day before, the nest of this unfortunate couple had been again cut away for me by the owner of the cliff. The birds had, however, not given up this particular spot, and were still flying up to it, and evidently preparing to build again! While we were there small parties kept refreshing themselves by hovering under the spray of a thin waterfall that fell from the top of the rock.

The nests, so far as we could see, were built under the numerous brick-like projections on the face of the rock. The two nests obtained are shallow cups interiorly, with the entrance in the top corner of the nest. They are made of mud and bits of moss, and are lined with grass-stems and a few feathers. The nest taken on the 27th April measures inside about 4½ inches in diameter by 1 inch in depth; that taken on the 15th May has a diameter of about 3½ inches by 4, the depth of the egg-cavity being about 2 inches.

The four eggs of the nest taken on the 27th April were fresh. In shape they are somewhat elongated ovate. The colour is pure white and the texture smooth, with a decided gloss. They measure 0·78 × 0·52, 0·77 × 0·52, 0·75 × 0·52, and 0·74 × 0·52 inch. Mr. Rickett has kindly sent me the measurements of the eggs taken on the 15th May, which are in his collection. These are 0·74 × 0·52, 0·73 × 0·51, and 0·70 × 0·51 inch.

The natives and our collectors told us that these Martins arrive early in the spring, and that another kind of Swallow comes to these mountains in June; but they are such swift fliers that our men, on the only occasion that they saw them, were unable to shoot a single specimen. They appear to frequent the wooded summits of the mountains.

108. Herpornis tyrannula Swinhoe.

This pretty bird, which does not appear to be very rare in Central Fohkien, was shot once in the mountains between Shaowufu and Kuatun in December 1895, and I have a specimen dated Kuatun, 11th April, 1897. We did not procure any on this trip.

109. Zosterops simplex Swinhoe.

Several of these White-eyes were shot by the Kuatun hunters on the 19th April, 1898. These men thought they had got us a very rare bird indeed, and were much disappointed when told that it was such a common bird at Foochow. It seems, therefore, that only a few come up to spend the breeding-season.

We took one nest with four eggs on the 4th May on a thin tea-bush just inside a bamboo-plantation in the Upper Kuatun valley. The eggs are ovate, very pale greenish blue in colour. The texture is rough in one of the eggs, the others being smooth. They measure 0·59 × 0·48, 0·58 × 0·46, and 0·57 × 0·45 inch (two).

[To be continued.]

XXXV.—*Critical Notes on the Zoo-geographical Relations of the Avifauna of Rio Grande do Sul.* By H. von Jhering, C.M.Z.S.

One of the difficulties in the discussion of the avifauna of Southern Brazil, and especially of that of Rio Grande do Sul, arises from the scarcity of materials, and another from various errors in the indications of the habitats of the birds themselves. Two such erroneous indications, for example, occur in the paper published by Count Berlepsch and the writer on the Ornis of Taquara do Mundo Novo*. *Trogon aurantius*, determined by Count Berlepsch on an incomplete and only partially-coloured figure, is not a species of Rio Grande do Sul, being represented in São Paulo and Rio Grande do Sul by *T. surucura*, of which it seems to be the northern form. Again, *Rhamphastos ariel* does not occur in Rio Grande do Sul, and was indicated by me, by mistake, instead of *R. toco*.

It seems to me that the work of Burmeister ('Syst. Ueber. d. Thiere Brasiliens') also mentions some species as found in Rio Grande do Sul which do not occur in the State in question. Pelzeln says that in the Museum of Lisbon there exists a specimen of *Ibycter ater* from Rio Grande do Sul. But this is an Amazonian species, which has never been found by other observers in Southern Brazil.

Many naturalists have the habit of writing "Rio Grande" when speaking about Rio Grande do Sul; we have, however, not only two States of this name in Brazil, but also in many other States places of the same name. Thus, in the State of São Paulo, "Rio Grande" is a station on the São Paulo and Santos Railway; and the São Paulo branch of the Paraná river is also called "Rio Grande." There are likewise many places in Brazil bearing the name São Paulo. It is quite easy for misunderstandings to arise in this way, and some of the wrong indications above alluded to have probably had such an origin.

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* "Die Vögel der Umgegend von Taquara do Mundo Novo, Prov. Rio Grande do Sul," Zeitschr. f. d. gesammte Ornithol. 1855, p. 97.

But there are other incorrect statements which are very pernicious, and which must have some other explanation. The Bird-Catalogues of the British Museum enumerate a great number of species stated to have been obtained at "Pelotas, Rio Grande do Sul," by "Joyner." Pelotas is a city of Rio Grande do Sul, in 32° S. lat., and I affirm that the greater number of the birds thus indicated cannot have been really collected at Pelotas.

I have devoted more than twelve years to the study of the avifauna of the State of Rio Grande do Sul. Although I have never lived at Pelotas, I have obtained many birds from there. I have, moreover, resided successively at Pedras Brancas, Rio Grande do Sul, São Lourenço, Colonia of São Lourenço, and Barra do Rio Camaquam, and have thus passed nearly ten years in different localities situated a short distance from Pelotas.

It may also be stated that at Pelotas I have examined the beautiful collection of birds of Mr. Carlos Ritter, who, although not a trained zoologist, is an ardent collector and has a perfect knowledge of the avifauna of this country. He has told me that he never saw such species as *Dacnis cayana, Chrysotis æstiva,* and others at Pelotas. His investigations on the personality of "Joyner" have been without result, as have those of the British Consulate at Pelotas.

Among the species stated to have been received at the British Museum from "Pelotas," there are some which occur in the State of Rio Grande do Sul, but never at Pelotas, as, for example, *Ara maracana* Vieill.

If we set aside such species as occur in the northern part of the State, we have yet remaining the following 33 species, stated to have been obtained at "Pelotas, Rio Grande do Sul," by "Joyner," but which have not been recorded from Rio Grande do Sul by any other observer. Of these probably a great number do not occur at all in this State, and if so, certainly not in the southern part of it, at Pelotas. These are :—

Species.	B. M. Cat. of Birds.
Dacnis cayana (L.)	Vol. xi. p. 19
Calliste tricolor (Gm.)	,, p. 99
—— *thoracica* (Temm.)	,, p. 101
—— *flava* (Gm.)	,, p. 113
Nemosia guira (L.)	,, p. 224
Diucopis fasciata (Licht.)	,, p. 279
Orchesticus abeillii (Less.)	,, p. 297
Cissopis major (Cab.)	,, p. 300
Schistochlamys capistratus (Wied)	,, p. 301
Tanagra ornata Sparrm.	,, p. 161
Tachyphonus cristatus Gm.	,, p. 210
Spermophila nigro-aurantia Bodd.	Vol. xii. p. 113
Coryphospingus cristatus (Gm.)	,, p. 803
Sycalis flaveola (L.)	,, p. 377
Cassicus hæmorrhous (L.)	Vol. xi. p. 324
Arundinicola leucocephala (L.)	Vol. xiv. p. 37
Copurus colonus (Vieill.)	,, p. 50
Muscipipra vetula (Licht.)	,, p. 49
Elainea pagana (Licht.)	,, p. 137
Pitangus sulphuratus maximiliani Cab. & Heine	,, p. 176
Tityra inquisitor (Licht.)	,, p. 331
Hadrostomus atricapillus (Vieill.)	,, p. 333
Siptornis pallida (Wied)	Vol. xv. p. 59
Philydor rufus (Vieill.)	,, p. 97
Pyriglena leucoptera (Vieill.)	,, p. 269
Nyctidromus albicollis (Gm.)	Vol. xvi. p. 587
Pteroglossus wiedi Sturm	Vol. xix. p. 139
Andigena bailloni (Vieill.)	,, p. 136
Conurus auricapillus (Licht.)	Vol. xx. p. 178
Chrysotis æstiva (L.)	,, p. 285
Brotogerys tirica (Gm.)	,, p. 254
Scardafella squamosa (Temm.)	Vol. xxi. p. 464
Limnopardalus nigricans (Vieill.)	Vol. xxiii. p. 31

I have never succeeded in obtaining *Dacnis cayana* in Rio Grande do Sul. Suppose that, nevertheless, this species may occur there, this could be only north of 30° S. lat., the "*Cebus*-line." Mr. C. Ritter, to whom I have sent specimens of *Dacnis cayana*, writes to me that he has obtained examples of this species at Rio de Janeiro, but has never seen it in the State of Rio Grande do Sul. He likewise declares that the statements as to *Chrysotis æstiva*, as also *Cassicus hæmorrhous*, *Pteroglossus wiedi*, *Ara maracana*, and other species, occurring at Pelotas are erroneous, which is quite in harmony with my own observations.

The alleged occurrence of four species of *Calliste* at Pelotas is quite incredible, for one species of the genus only occurs south of the "*Cebus*-line," viz., *C. pretiosa*, of which *C. melanonota* is perhaps only a local form. The other three species of *Calliste* occur in the State of São Paulo, and possibly in Santa Catharina (*C. tricolor*, teste Berlepsch*), but never in Rio Grande do Sul. And if such species of São Paulo and Santa Catharina really extend their distribution to Rio Grande do Sul, they will be found north of the "*Cebus*-line," and not near Pelotas. A member of the Central Fauna which never occurs in the South-eastern Brazilian provinces is *Nemosia guira*. Other species of Rio and São Paulo which do not occur in Rio Grande do Sul, and, as I believe, not even in Santa Catharina, are *Sycalis flaveola* and *Elainea pagana*. *Pteroglossus wiedi* is a species which occurs north of the "*Cebus*-line." I obtained it at Mundo Novo, and Mr. C. Ritter at S. Sebastian do Cahey, but never at Pelotas. Species of *Andigena* and *Scardafella* have also never been found in Rio Grande do Sul.

The following case is quite conclusive:—The Ben-te-vi (*Pitangus sulphuratus*) is represented in the different parts of Brazil by three forms of the same species. The typical form *P. sulphuratus typicus* occurs at Pará, *P. sulphuratus maximiliani* ranges from Ceará to Santa Catharina, and *P. bolivianus*, or, as I believe it to be more correctly called, *P. sulphuratus bolivianus*, is found from Rio Grande do Sul to Argentina, Bolivia, and Matto Grosso. As the Pelotas specimens of Joyner are referred to *P. sulphuratus maximiliani*, it is quite evident that they cannot have been procured at Pelotas. On the other hand, it is noticeable that none of the characteristic southern forms obtained by me in the campos regions, and especially near Pelotas, such as *Bolborhynchus monachus* (Bodd.), *Anumbius acuticaudatus* Less., *Limnophyes curvirostris* Gould, nor certain species of *Cinclodes, Geositta, Phlœocryptes,* were collected by "Joyner" at his mysterious "Pelotas." It is therefore desirable to investigate the expeditions made by Mr. Joyner in Brazil. It is possible that his "Pelotas" may refer to the Pelotas river, which forms the boundary between the States of Rio Grande do Sul and Santa Catharina, between 27°–28° S. lat., and where the fauna may correspond to that represented in the collection of Mr. Joyner. Until we have exact information on the localities visited by Joyner, I cannot admit these species with inexact habitats as proper for discussion, and they have consequently been omitted in my list of Rio Grande do Sul birds, which I have just finished.

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* "Zur Ornithologie der Provinz Santa Catharina," J. f. O. 1873, p. 283.

São Paulo, March 10th, 1899.

[We quite agree with the author of this paper that there must have been an error in the locality "Pelotas, Rio Grande do Sul," assigned to Joyner's specimens. On examining the labels of the specimens in the British Museum, we find that they are *not original labels of the collector*, but written, probably under Salvin's instructions, on card-labels specially prepared for the Salvin-Godman Collection.

Joyner, as we are kindly informed by Mr. Alexander Fry, was a civil engineer, employed on the waterworks of the city of São Paulo in the years 1881–3. Some of his specimens are labelled "Rio Claro, Goyaz," as will be observed in the Catalogue of Birds. This locality may be correct, but that of "Pelotas, Rio Grande do Sul," is, no doubt, *quite unreliable*. Mr. Fry does not believe that Mr. Joyner was ever at Pelotas himself, and the birds so labelled were probably procured from some one else.—P. L. S.]

XXXVI.—*Proceedings at the Anniversary Meeting of the British Ornithologists' Union*, 1899.

The Annual General Meeting of the British Ornithologists' Union was held at the rooms of the Zoological Society of London, 3 Hanover Square (by permission of the Council of that Society), on Wednesday, the 3rd of May, at 6 P.M., Mr. F. DuCane Godman, F.R.S., President, in the Chair.

The Minutes of the last Annual Meeting having been read and confirmed, the Report of the Committee was read. It stated that the Union had suffered the loss of six Members by death since the last Anniversary. These were:—Mr. W. Borrer, Mr. W. E. Brooks, Professor O. C. Marsh, Mr. A. H. Everett, Mr. Osbert Salvin, and the Rev. A. C. Smith. To these names should be added that of Mr. F. C. Aplin, whose death in August 1897 was accidentally omitted to be noticed at the Annual General Meeting held in 1898.

Four Members had withdrawn, and four Members had been removed under the operation of Rule 6, for non-payment of their subscriptions.

The number of the Members of the Union was 338, consisting of 308 Ordinary, 2 Extraordinary, 10 Honorary, and 18 Foreign Members. There were 25 Candidates for the Ordinary Membership to be balloted for.

The state of the finances of the Union had justified the Committee in proceeding with the printing of the Subject-Index of the 36 volumes of 'The Ibis,' extending from 1859 to 1894. The manuscript of this Index had been completed. The Index had been framed on the same system as the Subject-Index of each separate series of 'The Ibis.' Four sheets, or 64 pages, had been already set up and passed for press. It was hoped the volume would be ready by the autumn. It was proposed to print only 300 copies of this Index. Members who had not compounded for the purchase of the two Index-volumes were therefore recommended to make early application for this Subject-Index volume, the cost of which would be £1 1*s*.

The Report having been adopted, the accounts for the year, which had been audited by Mr. H. E. Dresser, were presented by the Secretary, and approved by the Meeting.

Mr. F. DuCane Godman, F.R.S., was re-elected President, and Mr. E. W. Oates Secretary of the Union for the ensuing year. Mr. W. E. de Winton was elected a Member of the Committee in the place of Dr. R. Bowdler Sharpe, who retired by seniority.

The following 25 Candidates were then balloted for and declared to be duly elected Ordinary Members of the British Ornithologists' Union :—Frederick Robert Stephen Balfour, Dawyck, Stobo, N.B.: John Arthur Brooke, J.P., Fenay Hall, Huddersfield: Arthur Lennox Butler, State Museum, Kuala Lampor, Selangor, Federated Malay States: Thomas Leslie Melville Cartwright, Newbottle Manor, Banbury: Archibald Cowie, St. John's School, Leatherhead: Frederick Curtis, Chalfont House, 20 Queen Square, W.C.: Sutton A. Davies, 2nd E. Lanc. Regt., Rhaniket, Kumaon, N.W.P., India: Frank Herbert Carruthers Gould, 3 Endsleigh Street, Endsleigh Gardens, W.C.: Capt. Robert Napier Harvey, R.E., Chatham: Richard Heywood, St. Margaret's Place, King's Lynn: The Rev. Francis Charles R. Jourdain, Clifton Vicarage, near Ashbourne: George Augustin Macmillan, 19 Earl's Terrace, Kensington, W.: Johann van Oosterzee Marais, Forest Department, Knysna, Cape Colony: Basil William Martin, The Vicarage, Darley Abbey, Derby: Arnold Matthews, Ballynahinch Castle, Toombeola, Co. Galway: Richard Meinertzhagen, Mottisfont Abbey, Romsey: John Leonard Newman, Park Field, Mill Hill, Middlesex: Walter Henry Pope, 2 Hanover Terrace, Weymouth: Arnold Duer Sapsworth, Higham Lodge, Woodford Green, Essex: Frederick Courteney Selous, C.M.Z.S., Alpine Lodge, Worplesdon, Surrey: The Rev. William Serle, M.A., B D., 35 Bridge Street, Musselburgh, N.B.: Frederic Sharman, Yate Lodge, Bedford: Herbert James Walton, M.B., F.R.C.S., Indian Medical Service, care of Messrs. King & Co., Bombay: Lionel W. Wiglesworth, 42 Gloucester Place, Portman Square, W.: Alexander Frederick Richmond-Wollaston, B.A., 19 Upper Gloucester Place, N.W.

After a vote of thanks to the Council of the Zoological Society of London for the use of the Society's Rooms, the Meeting adjourned.

The Annual Dinner, subsequently held at Limmer's Hotel, was attended by 23 Members and guests.

XXXVII.—*Bulletin of the British Ornithologists' Club.*

Nos. LXI.–LXIII.

No. LXI. (March 30th, 1899).

The sixtieth Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 15th of March, 1899. *Chairman*: P. L. Sclater, F.R.S. Twenty-three Members and one guest were present.

Dr. Bowdler Sharpe sent for exhibition a specimen of an Owl from São Paulo, Brazil, which he was at first inclined to refer to a new genus, but which he found, somewhat to his surprise, to be a *Gisella*, allied to *G. harrisi* of Colombia. The specimen in question had been sent to him by Dr. von Jhering for identification, along with other specimens.

The position of the genus *Gisella*, according to Mr. Pycraft's recent classification of the Owls, was not with *Syrnium*, as Dr. Sharpe had placed it in 1875, but nearer to *Nyctala*, as it had been arranged by Messrs. Sclater and Salvin in the 'Nomenclator' (p. 116). In plumage the species of *Gisella* were not unlike *Nyctala*, but the two genera were evidently distinct; the asymmetry of the ear-openings, a feature in both, differed in character. The shape of the long aperture was not quite the same in *Gisella* and *Nyctala*; the aperture which is *left* in the ear of *Nyctala* corresponded to that of the *right* in *Gisella*, and *vice versa*. The form of the spinal tract, so far as could be judged from the skin, was similar in the two genera, according to Mr. Pycraft, who had figured that of *Nyctala* in the 'Transactions of the Linnean Society,' (2) vii. pl. 26. fig. 1.

Dr. Sharpe believed that the São Paulo bird was different from *G. harrisi* of Colombia, and proposed for it the name of

Gisella jheringi.

G. similis *G. harrisi*, sed supracaudalibus maculis ovatis albis ornatis, et caudæ fasciis albis tribus: fasciâ longitudinali auriculari, loris et fasciâ gulari nigerrimis, nec chocolatino-brunneis distinguenda. Long. tot. 9·0 poll., alæ 5·25, caudæ 2·9, tarsi 1·15.

Mr. Digby Pigott informed the meeting that a Magpie and a Jackdaw had together occupied and repaired an old Magpie's nest in St. James's Park, and that that morning the Jackdaw had been noticed inside the nest with the Magpie in close attendance. He asked whether any Member of the Club was aware of any previous instance of these birds pairing. He had been informed that something of the kind had occurred in Wales, but had heard no particulars.

Mr. W. P. Pycraft mentioned that he had recently received from Mr. Frank Finn a specimen of the Blue-throated Barbet (*Cyanops asiatica*) which showed a similar heel-pad to that found in the Wryneck (*Iynx torquilla*). The specimen would be exhibited at the next meeting.

No. LXII. (April 29th, 1899).

The sixty-first Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 19th of April, 1899. *Chairman*: P. L. Sclater, F.R.S. Twenty Members and four guests were present.

Mr. W. R. Ogilvie Grant gave an account of his recent journey to Socotra, and exhibited a series of specimens obtained by himself and Dr. H. O. Forbes. Among them were examples of the following new birds, full descriptions of which would appear in the 'Bulletin' of the Liverpool Museum:—*Scops socotranus, Caprimulgus jonesi, Motacilla forwoodi, Fringillaria insularis, F. socotrana, Passer hemileucus,* and *Phalacrocorax nigrogularis.*

The Hon. Walter Rothschild exhibited a stuffed specimen of *Casuarius casuarius sclateri,* shot by Herr Emil Weiske on the Brown River, S.E. New Guinea.

This form had been originally described by Count Salvadori from a specimen which died in the Zoological Gardens about the year 1875. He had afterwards united the species with *Casuarius casuarius beccarii* (Sclater); but the latter was now known to be confined to Vokan Island, in the Aru group, while *C. c. sclateri* was found all over the south and south-east of New Guinea. The differences of the two forms had been given in 'Novitates Zoologicæ,' vol. vi. no. 1, p. 75, and would be further detailed in a 'Monograph of the Cassowaries,' shortly to be published.

Mr. Walter Rothschild also exhibited a series of skins of the *P. cinctus* group of the genus *Ptilinopus*, all the species being shown excepting the newly-described *P. alligator*, Collett, of which Mr. Rothschild exhibited a coloured figure. He recognized the following forms:—

P. cinctus. *Hab.* Timor.
P. albocinctus. *Hab.* Lombok, Sumbawa.
P. albocinctus baliensis. *Hab.* Bali.
P. everetti. *Hab.* Alor, Pantar.
P. lettiensis. *Hab.* Letti, Dammar, and Babber.

A fine specimen of the wonderful *P. dohertyi* was also brought for exhibition by Mr. Rothschild.

Mr. Rothschild further exhibited several skins of *Lophophorus refulgens*, and added the following remarks:—

"In 1893 (Bull. Soc. Zool. Fr. xviii. p. 19) Dr. Oustalet described two Monaul Pheasants as local forms of '*Lophophorus impeyanus*' under the names *L. impeyanus* var. *mantoui* and *L. impeyanus* var. *obscurus*, the former having the copper-coloured neck and head replaced by bright blue, the other having all the metallic parts replaced by deep greenish black. I was at first inclined to consider *L. impeyanus* var. *mantoui* a good species; for I procured three skins, all exactly alike. My suspicions were first aroused by finding in a lot of 3000 ordinary Monaul skins one specimen of *L. impeyanus* with a dull bronze-coloured neck, one *L. impeyanus mantoui*, and two semi-albino birds. My doubts as to these forms were settled on receiving a black Monaul killed by an English sportsman out of a flock of four, together with a cock and three hens of the ordinary Monaul. Mr. Grant, in vol. xxii. of the 'Catalogue of Birds,' says that *Lophophorus refulgens*, Temm., is the correct name for the Common Monaul; so I am obliged to record all the skins exhibited as varieties of *Lophophorus refulgens*."

Mr. Hartert exhibited specimens of *Geocichla peroni* and of a nearly related new species of Thrush which he named

Geocichla audacis, sp. nov.

Similar to *G. peroni* of Timor, but with the upper surface more uniform and of a much deeper chestnut-rufous colour; chest and sides of body darker and more chestnut-rufous than in *G. peroni*; wing shorter, not more than 102–104 mm., while it is at least 110 in *G. peroni*. ♂ and ♀ not materially different.

Hab. Dammar Island, in the south of the Banda Sea. Collected by Heinrich Kühn.

Mr. Hartert also showed a pair of *Erythrura forbesi* from Dammar. This species was hitherto only known from the type specimen in the British Museum, from the Tenimber Islands.

Mr. Sclater stated that he had been staying in the Riviera during the past four weeks, and wished to call attention to the appalling deficiency of bird-life in that otherwise charming country. Although out every day on the hills round Cannes and Nice, and always on the look-out, he had seen but very few birds, and those mostly of the commonest sorts and always shy and timid. Even Sparrows were only occasionally to be met with. In the beautifully kept gardens of the villas not a bird's note was to be heard, and very rarely was a single Tit or Robin to be seen. Mr. Sclater attributed this scarcity of birds (which was deplorable, not only from an æsthetic but still more from an economical point of view) to the prevalence of the "*chasse*" during the autumn and winter months and to the sale of small birds of every sort for food in the markets; and expressed a hope that every Member of the B.O.U. would do all he could to shelter and protect bird-life in the country, lest we should fall into the same condition.

Mr. Rothschild also made some remarks on the few birds recently observed by him near Bordighera.

Mr. Sclater had, curiously enough, found in the bird-shop of Peracino, at Cannes, four examples of a bird which he had never seen alive before—the Masked Hawfinch (*Coccothraustes personatus*) of Japan—and had purchased them for the Zoological Society for a trifling sum. Mr. Sclater exhibited two of these birds in their cage to the meeting.

Mr. E. Bidwell exhibited a new field-glass, which he considered to be likely to prove of great service to ornithologists.

Mr. Hartert made some remarks on the system of labelling birds adopted in the Tring Museum, drawing particular attention to the red label which was used for the easy identification of typical specimens.

Mr. H. J. Elwes made some very interesting remarks on birds observed by him during his expedition to the Altai Mountains, with especial reference to the boundary-lines of the Eastern and Western Palæarctic Region.

Mr. L. W. Wiglesworth sent the following note to the meeting:—

"*Pachycephala chlorura,* Gray, of the New Hebrides, belongs to a group of *Pachycephalæ* in which the coloration of the sexes differs considerably, and the female was described as an *Eopsaltria* by Gray and named by him (B. Trop. Is. 1859, p. 21) *Eopsaltria cucullata,* from a single specimen in the British Museum obtained by Macgillivray in Aneiteum Island.

"A similar mistake by Verreaux & Des Murs has been pointed out by Dr. Oustalet (Bull. Soc. Philom. Paris, 1879, p. 219) in the case of *Eopsaltria caledonica* (Gm.) and *Pachycephala morariensis,* Verr. & Des M., of New Caledonia, the former name having been given to a female (or young male, which is very like the female), the latter name to the adult male. This species should therefore be called *Pachycephala caledonica* (Gm.). Both *Eopsaltria cucullata* and *Pachycephala morariensis* are erroneously allowed to rank as valid species by Dr. Gadow in the 'Catalogue of Birds,' viii. 1883, pp. 179, 199, and by Wiglesworth in 'Aves Polynesiæ,' 1891, pp. 27, 29."

Two photographs of the specimen of *Euplocomus andersoni,* Elliot (now in the Calcutta Museum), were sent for exhibition by Mr. FRANK FINN, who considered this example to be the type of the species.

No. LXIII. (May 31st, 1899).

THE sixty-second Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 17th of May, 1899. *Chairman*: P. L. SCLATER, F.R.S. Twenty Members and four guests were present.

Mr. OGILVIE GRANT sent the description of a new species of Hill-Partridge, discovered by Mr. C. B. Rickett in the hills of Kuatun in Fohkien. This species Mr. Grant proposed to call

ARBORICOLA RICKETTI, sp. n.

A. similis *A. gingicæ*, sed fronte et superciliis albis distinguenda. Long. tot. 10·5 poll., culm. 0·9, alæ 5·7, caudæ 2·1, tarsi 1·6.

Hab. Hachong and Yamakan, Fohkien.

Mr. RICKETT sent the description of a new species of Trogon, obtained by him on the same expedition to Kuatun:—

HARPACTES YAMAKANENSIS, sp. n.

H. similis *H. erythrocephalo,* sed suprà magis olivascenti-brunneus, pileo quoque olivascenti-brunneo distinguendus. Long. tot. 13·3 poll., culm. 0·75, alæ 6·2, caudæ 6·8, tarsi 0·8.

Hab. Yamakan, Fohkien.

Mr. Boyd Alexander gave an account of his recent expedition to the Zambesi River and its tributaries. Amongst a number of specimens of interesting species obtained by him, the following were pointed out as some of the more remarkable:—*Chætura stictilæma, Erythropygia zambesiana, E. quadrivirgata, Cossypha natalensis, C. heuglini, Pinarornis plumosus, Nicator gularis, Dryoscopus sticturus, Erythrocercus francisci, Saxicola falkensteini, Campothera bennetti, Glaucidium capense, Macronyx wintoni, Glareola emini,* and *Locustella fluviatilis.*

The following species were described by Mr. Alexander as new:—

Sylviella pallida, sp. n.

Most nearly allied to *Sylviella leucopsis,* Reichenow, the typical examples of which were obtained at Malindi. The British Museum possesses a male and female of the typical *S. leucopsis* from the neighbouring island of Manda, and I have compared my specimens with these. From *S. leucopsis* the Zambesi specimens differ in the following particulars:—The upper parts are uniform grey, *not* washed with greenish; the bill is larger, and is *black,* not *brown.* Superciliary stripe, chin, throat, cheeks, and fore-neck, as well as the centre of the breast and belly, white, tinged with buff; the sides and flanks more distinctly washed with the latter colour.

♂. Culmen 0·45 inch, wing 2·3, tail 1, tarsus 0·75.

♀. Wing 2·1 inches.

Hab. Zambesi River.

Eremomela helenoræ, sp. n.

Most nearly allied to *E. polioxantha,* but differs in the following particulars:—It is smaller; the feathers of the rump are olive-yellow, not ashy grey, washed with olive; the secondaries tipped with white; axillaries ashy white, not yellow; under tail-coverts white; feathers of thighs dusky, tipped with white. The tail is considerably shorter than in *E. polioxantha.* Upper mandible brown, lower one horn-colour; tarsus black; iris orange. Total length (measured in flesh) 3·56 inches, culmen 0·5, wing 2·1, tail 1·18, tarsus 0·6.

Hab. Mesanangue, Zambesi River.

CISTICOLA MUELLERI, sp. n.

Closely allied to *C. dodsoni*, Sharpe, but differs in the following particulars:—It is somewhat larger, and does not possess the broad sub-terminal band of black on the tail-feathers, as in *C. dodsoni*. The tail-feathers have no broad white tips, and, with the exception of the two centre ones, which are of a uniform brown, they possess a narrow dusky sub-terminal marking under certain lights on their inner webs only.

Adult female. Wing 1·82 inch, culmen 0·4, tail 1·6.

Named in memory of Mr. Müller, who commanded the rear-guard of Major Gibbons's Expedition, and who died at Tete.

Mr. ROBERT H. READ read some extracts from a letter received by him from Dr. Cuthbert Christy, on some of the birds of the Upper Niger.

The Hon. WALTER ROTHSCHILD sent descriptions of two new sub-species of Cassowaries, from examples living in the Zoological Garden at Berlin:—

CASUARIUS PICTICOLLIS HECKI, subsp. n.

This bird bears the same relationship to *C. picticollis* that *C. papuanus edwardsi* does to *C. papuanus*. The throat and hind-neck are deep indigo-blue. Occiput pale greenish blue. A small round black wattle on the fore-neck. Lower sides of neck dark crimson. Casque and plumage similar to those of *C. picticollis*.

Hab. German New Guinea.

This form is named in honour of Dr. Heck, Director of the Zoological Garden in Berlin.

CASUARIUS UNIAPPENDICULATUS AURANTIACUS, subsp. n.

Face, cheeks, and occiput pale sky-blue; throat dark blue. Occipital patch, fore-neck, hind-neck, and lower sides of the neck deep reddish orange. Casque horny green, and much more compressed laterally than in *C. uniappendiculatus*. Long cheek-wattles absent; but the sides of face distended, as in *C. philipi*.

Hab. German New Guinea.

Mr. J. L. Bonhote exhibited some specimens of birds recently obtained by him in the Bahamas, amongst which were examples of *Pyranga æstiva, Protonotaria citrea,* and *Vireo olivaceus,* species not previously recorded from New Providence.

The following new species was described in a communication received from Mr. F. J. Jackson:—

Pœoptera greyi, sp. n.

♂. Similis *P. lugubri,* sed caudâ minùs acuminatâ et alis nigris purpureo paullò micantibus, remigibus haud pallidè brunneo marginatis: corpore haud purpurascente et vix violaceo: gutture magis chalybeo. Long. tot. 8·0 poll., culm. 0·75, alæ 4·1, caudæ 3·25, tarsi 0·8.

♀. A mari differt more generis *Pœopteræ.* Griscescenti-viridis, remigibus intùs castaneis. Long. tot. 7·8 poll., culm. 0·7, alæ 3·95, caudæ 3·2, tarsi 0·8.

Hab. Nandi, Equatorial Africa.

Mr. R. J. Ussher gave a most interesting exhibition of relics which he had discovered in the kitchen-middens on the coast of Waterford. In addition to the remains of red deer, oxen, domestic fowl, &c., the series of bones of the Great Auk (*Alca impennis*) which were exhibited tended to prove that in former times the latter species must have bred in this part of Ireland.

Mr. Sclater exhibited another series of beautiful photographs of Australian birds' nests and eggs, which had been transmitted to him by Mr. D. Le Souëf, of Melbourne, and were partly intended to illustrate some notes of Mr. Le Souëf's to be published in the next number of 'The Ibis.' Among these, special attention was called to the photographs of the nest and eggs of the Northern Oriole (*Oriolus affinis*), of the Black-faced Wood-Swallow (*Artamus melanops*), and of the Northern Thickhead (*Pachycephala falcata*).

Mr. Sclater exhibited a mounted specimen of a hybrid between a male Guinea-fowl and a domestic hen, which he had received alive as a present from Dr. Goeldi, of Pará (see P. Z. S. 1898, p. 348), and the anatomy of which would be described by Mr. Beddard in the next number of 'The Ibis.' Such hybrids were said to be not uncommon at Ceará in Brazil, whence the present specimen was obtained, and to be known by the name of "Tahý."

XXXVIII.—*Notices of recent Ornithological Publications.*

[Continued from p. 329.]

61. *Agassiz's Report on the Museum of Comparative Zoology at Harvard.*

[Annual Report of the Curator of the Museum of Comparative Zoology at Harvard College to the President and Fellows of Harvard College for 1897–98. 8vo. Cambridge, U.S.A., 1898.]

From this Report we regret to learn that Prof. Alexander Agassiz resigned his long-held office of Director of the Museum of Comparative Zoology at Harvard College, Cambridge, U.S.A., at the close of last year. Mr. Agassiz has presented to that Institution all his collections and papers deposited there, with conditions of free access to them during his life. He does not seem at all satisfied with the future prospects of the Museum, believing that the "Natural-History Museums of New York and Chicago, connected as they are with municipalities which deal with them in a most generous and intelligent manner, will soon leave far behind a University Museum depending upon resources which grow annually less with painful regularity." The Department of Mammals and Birds in the Museum, which is presided over by Mr. William Brewster, is stated to have had an "uneventful" year.

62. *Annals of Scottish Natural History.*

[The Annals of Scottish Natural History, a Quarterly Magazine, with which is incorporated 'The Scottish Naturalist.' No. 29, January 1899, and No. 30, April 1899.]

In the January issue of this quarterly, a list of the birds of the Ballinluig district, Perthshire, by Mr. Bruce Campbell, is followed by a short but interesting article by Mr. William Evans on some eggs ascribed to the Wood-Sandpiper (*Totanus glareola*), taken in Elginshire in 1853 by the late Mr. C. Thurnall, of Whittlesford, Cambridgeshire. The Rev. H. A. Macpherson has a note (with full-page illustration) on the changes of plumage of the Little Gull (*Larus minutus*); while among the interesting occurrences may be mentioned the European form of the Hawk-Owl (*Surnia ulula*) in Aberdeenshire, and Baillon's Crake (*Porzana bailloni*) in Caithness. A bird shot in Aberdeenshire, and erroneously recorded as a Little Bustard, is shown in the April number to have been a female of *Houbara macqueeni* by Mr. W. Eagle Clarke, who has already corrected the describer's error in the 'Bulletin' of the British Ornithologist's Club (no. lx. p. xxxvi). Among the occurrences, the most notable is that of a male example of the King-Eider (*Somateria spectabilis*) shot on the west side of Shetland on February 24th; this bird was exhibited by Mr. Harting at a meeting of the Linnean Society on March 2nd. A specimen of the Lesser Whitethroat (*Sylvia curruca*) from the Outer Hebrides and an example of the Scandinavian black-bellied race of the Dipper in Shetland also deserve mention.

63. *Arrigoni degli Oddi on Venetian Ducks.*

[On two Hybrid Ducks in Count Ninni's Collection at Venice. By Dr. E. Arrigoni degli Oddi. Ornis, ix. 1897–98, p. 23.

Ornithological Notes on thirty abnormal-coloured Anatidæ caught in the Venetian Territory. By Prof. E. Arrigoni degli Oddi. *Op. cit.* p. 109.]

These are two papers on the various ducks of the Venetian lagoons and their crosses and varieties, to which the author, as is well known to our readers, has devoted great attention.

64. *'The Auk.'*

[The Auk. A Quarterly Journal of Ornithology. Vol. xvi. Nos. 1, 2, January and April 1899.]

The January number of our transatlantic contemporary opens with a paper by Mr. F. M. Chapman on the distribution and habits of *Ammodramus maritimus* and its allies, with a coloured plate. Mr. O. B. Warren describes the life of the Canada Jay, with illustrations of its nest and young from photographs. From this phase of country-life we pass to Prof. Gill's discussion of the correct orthography of the generic names *Pediocœtes* and *Poocœtes.* In this case we are quite disposed to agree with Prof. Gill as to the origin of the terms. But as we prefer "grammar" to "priority," although we accept his derivation, we shall write the two generic names as they are spelt above, being quite unconvinced by Dr. Allen's response to Mr. Elliot on the subject of Canon xl. of the A. O. U. Code. Various species and subspecies are described by Messrs. E. W. Nelson and H. C. Oberholser respectively, and will, no doubt, be duly noted in our 'Zoological Record,' Aves; together with the names of Mr. Ridgway's new Fringillidæ. The Report of the A. O. U. Committee on Protection of North-American Birds is well worthy of consideration by those who are anxious to put a stop to traffic in "bird-millinery." In the General Notes are two records of the recent captures of *Œstrelata hæsitata* on the Ohio River, Cincinnati, assuming that the identifications are correct. According to the Ninth Supplement to the A. O. U. Check-List, the Divers, which used to be Colymbidæ, and became Urinatoridæ in the Check-List of 1898, have now become Gaviidæ. So our Ivory Gull, which was called *Gavia alba,* now becomes *Pagophila alba* (Gunnerius); and after their long insistence upon *Sterna tschyrava* Lepechin, for the Caspian Tern, the A. O. U. has now come round to *Sterna caspia* Pallas. *Respice finem!*

In the April number Mr. Outram Bangs reviews the species of Humming-birds found in the Santa Marta region of Colombia, and a coloured frontispiece of *Leucuria phalerata* is given. Mr. O. G. Libby has an article on the Nocturnal Flight of Migrating Birds. Mr. John Murdoch's Historical Notice of Ross's Roseate Gull (*Rhodostethia rosea*) will interest a large circle of our readers, for the author has "seen literally thousands" of this species on the wing. He also speaks of "not more than 110 specimens known to be in existence" of a species which barely boasted a score of known specimens up to the date of the United States Expedition to Point Barrow, on which Mr. Murdoch was the naturalist. He considers that Keenan Island, to the north of Point Barrow, will probably prove to be one of the main breeding-grounds of this beautiful Gull, although colonies doubtless exist on Dr. Nansen's Hvidtenland and in other localities within the circumpolar area. Passing over papers of local interest, Mr. Witmer Stone's article on "Some Philadelphia Ornithological Collections and Collectors, 1784–1850," is of considerable value and full of quaint incidents. For instance, when Peale attempted to open his Museum on Sundays the local press was hostile in its criticism, "to counteract which he had a sign prepared for display on the Sabbath, bearing the legend: 'Here the wonderful works of the Divinity may be contemplated with pleasure and advantage. Let no one enter to-day with any other view.'" The public spirit of Dr. Thomas B. Wilson in purchasing the Massena, Gould, and Boys collections is admirably shown; and, perhaps from a narrow-minded point of view, we may regret that for want of such energy in Europe these magnificent collections crossed the water.

65. *Bangs on the Birds of Santa Marta, Colombia.*

[(1) On some Birds from Santa Marta, Colombia. By Outram Bangs. Proc. Biol. Soc. Washington, xii. p. 131 (1898).

(2) On some Birds from Pueblo Viejo, Colombia. By Outram Bangs. Ibid. p. 157 (1898).

(3) On some Birds from the Sierra Nevada de Santa Marta, Colombia. By Outram Bangs. Ibid. p. 171 (1898).]

These three papers, which until recently have escaped our notice, contain an account of the specimens of birds obtained for the author by Mr. W. W. Brown, Jun., who is collecting at Santa Marta, on the north coast of Colombia, and on the celebrated isolated peak of the Sierra Nevada of Santa Marta, which rises to a height of 17,400 feet above the sea-level *.

In the first paper Mr. Bangs writes on a series of 700 skins obtained within fifteen miles of Santa Marta, and gives a list of the species, describing, as new species and subspecies, *Galbula ruficauda pallens, Melanerpes wagleri sanctæ-marthæ, Dendrocincla olivacea anguina, Sycalis browni, Cyanocompsa concreta sanctæ-marthæ, Arremonops conirostris canens, Pyranga faceta, Cyclorhis flavipectus canticus, Dacnis napæa,* and *Merula incompta.*

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* *Cf.* Simons, Proc. R. G. S. 1879, p. 689.

The second paper relates to a collection made by Mr. Brown at Pueblo Viejo*, in the high Sierra Nevada de Santa Marta, in March 1890, and describes as new *Elainea browni, Automolus rufipectus, Buarremon basilicus,* and *Thryothorus lætus.* There was also in it an example of the rare Humming-bird, *Anthocephala floriceps,* peculiar to this locality.

Mr. Brown's third lot of 300 skins was obtained in May and June 1898 at various localities above 5000 feet in the Sierra. It contained examples of the following species and subspecies described as new :—*Neocrex colombianus, Aulacorhamphus lætus, Leucuria* (gen. nov. Trochilid.) *phalerata, Elainea sororia, Grallaria spatiator, Spinus spinescens capitaneus, Diglossa nocticolor, Merula phæopyga minuscula,* and *Merula gigas cacozela.*

We trust that Mr. Bangs will not fail to put together a complete account of this most interesting ornis when Mr. Brown has finished his work. The last paper on the subject is that by Salvin and Godman in this journal (Ibis, 1879, p. 196).

66. *Beal and Judd on the Food of Cuckoos and Shrikes.*

[Cuckoos and Shrikes in their relation to Agriculture. The Food of Cuckoos. By F. E. L. Beal, B.S. The Food of Shrikes. By S. D. Judd, Ph.D. Prepared under the direction of C. Hart Merriam, M.D. Bulletin no. 9, U.S. Department of Agriculture, Division of Biological Survey. Washington, 1898. 26 pp.]

This is another of the very useful papers by which a more accurate knowledge of the real food of North-American birds is being gradually acquired. In the laboratory of the Biological Survey at Washington 109 stomachs of *Coccyzus americanus* and 46 of *C. erythrophthalmus*, from twenty different States, were examined and found to contain, with one exception, only insect-food—beetles, grasshoppers, caterpillars, &c.—of which full particulars are given by Mr. Beal.

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* Mr. Bangs gives the elevation of this village at 8000 feet, but in Simons's map (*op. cit.*) it is marked 3700 feet.

Dr. Judd, who reports on the Shrikes (*Lanius ludovicianus* and *L. borealis*), states that, so far as determined from the examination of 155 stomachs of these birds collected during every month of the year all over the United States, their food consists of mice, small birds, and insects, the last being mainly grasshoppers.

There can be no question, therefore, of the beneficial action on agriculture in North America of both of these groups of birds.

67. *'Bird-Lore.'*

[Bird-Lore, a Bi-monthly Magazine devoted to the Study and Protection of Birds. Edited by Frank M. Chapman. Vol. i. No. 1. February 1899.]

We have received a copy of the first number of 'Bird-Lore,' a new popular ornithological magazine edited by Mr. Frank M. Chapman and published at New York by the Macmillan Company. It is to be the organ of the "Audubon Societies" which are now being instituted in many States of the Union for the protection of birds. We are told that every prominent American writer on "birds in nature" has promised to contribute to 'Bird-Lore' during the present year, and we have a good sample of the style of its articles and illustrations in the present number. We need only add that we cordially wish success to the new journal and to the worthy cause it represents.

68. *Butler on the Birds of Perak.*

[Birds Collected and Observed on the Larut Hills, Perak, March and April 1898. By A. L. Butler, F.Z.S. 8vo. Singapore, 1898.]

Mr. A. L. Butler, F.Z.S., Curator of the State Museum of Selangor, writes on the birds which he collected on the Larut Hills in February and March 1898. The list includes 113 species, and gives appropriate field-notes as to exact localities and habits. Three new species discovered during this expedition (*Cryptolopha butleri, Serilophus rothschildi,* and *Gecinus rodgeri*) have been previously described at Meetings of the B. O. C. Mr. Butler's collection is deposited in the Tring Museum.

69. *Campbell on the Nests and Eggs of the* Meliphagidæ.

[Nests and Eggs of the Honey-eaters or Meliphagous Birds of Australia. By A. J. Campbell, F.L.S. (Austral. Assoc. Adv. Science, Session 1898.) Sydney.]

Mr. A. J. Campbell, who, as will be seen below, is engaged in preparing an illustrated work on the nests and eggs of the Birds of Australia, placed before the recent meeting at Sydney of the Australasian Association for the Advancement of Science a treatise on the nesting of the Honey-eaters—one of the most varied, numerous, and attractive families of the Australian ornis. It contains upwards of 70 Australian species, the nests and eggs of which, with few exceptions, are here described.

70. *Clark on the Feather-tracts of the North-American* Gallinæ.

[The Feather-tracts of North-American Grouse and Quail. By Hubert Lyman Clark, Ph.D. Proc. U.S. Nat. Mus. xxi. p. 641.]

Dr. Clark has made a careful study of the pterylosis of the Gallinaceous Birds of North America, and gives us the results arrived at in this well-written memoir. Through the kind assistance of his friends he has been able to examine the feather-tracts in 18 species of these birds, representing all the North-American genera. The Odontophorinæ are well distinguishable from the Tetraoninæ as regards their pterylosis, as are also the 5 generally recognized genera of the former and the 7 of the latter group from each other. The

Odontophorinæ show a well-developed claw on the thumb, which is absent in the Grouse.

The pterylosis of the Turkey (*Meleagris*) has been well figured by Nitzsch. There are 18 rectrices and only 18 secondaries, and a prominent claw on the thumb. Its position is probably nearest to the Phasianidæ. The single representative of the Cracidæ in North America (*Ortalis*) is obviously far remote from the Galline type as regards its feathering, as might have been anticipated from other points in its structure.

It would be very desirable that some ornithologist should take up the examination of the pterylosis in the genera of Gallinæ found in other parts of the world, and thus arrive at some good general results as to their classification. Meanwhile we must be thankful to Dr. Clark for this valuable contribution to a little-worked subject.

71. *Evans on Birds.*

[Birds. By A. H. Evans, M.A., Clare College, Cambridge. London: Macmillan & Co., 1899. 1 vol., 635 pp.]

Mr. Evans's volume on the Class of Birds is the ninth of the series of ten which, when complete, will form the 'Cambridge Natural History.' When considering it, we should recollect that the plan of the whole series is to form a "standard Natural History, accurate enough to be of use to the student, and at the same time popular enough for the general reader who desires trustworthy information as to the structure and habits of all the members of the Animal Kingdom." This is a very difficult ideal, and we cannot feel surprised if it has not been quite carried out even by the accomplished author of the present volume. At the same time it will be allowed that Mr. Evans has produced a book full of concentrated essence of information on birds, especially as regards their outer structure and habits, and one that we can cordially recommend as a work of reference to all students of ornithology.

As his system, the author adopts that of Dr. Gadow " with some slight modifications." We venture to suggest that a few more alterations might have been well introduced. To place the "Columbæ" under the order "Charadriiformes," the "Psittaci" among the "Cuculiformes," and the "Striges" in the "Coraciiformes" cannot be justified even in obedience to such a great authority as Dr. Gadow. If there are "Orders" at all in the "Class" of Birds, the first two of these groups are entitled to that rank; and in our opinion the "Striges" have also equal claims to such a position, whether external or anatomical characters are considered. Any tyro in ornithology would recognize a Pigeon, but it would be difficult to make him understand its association in the same group as Gulls and Plovers. Again, there can be no doubt about the low position of the Penguins, with their continuous plumage and incompletely-fused metatarsals. They should go below the Colymbiformes, not above them. Nor can we allow that the Tinamous have any business above the highly-organized Birds of Prey. They are "semi-Ratites" in spite of their sternum, and should remain at the bottom of the Carinate series.

Mr. Evans has rightly gone, in the majority of cases, to the most recent authority for information on the group treated of, for it is impossible for one mind to grasp such a multitude of particulars. But in the case of the Cranes he seems to have missed consulting Mr. Blaauw's Monograph, having included in his list such untenable species as *Grus lilfordi* and *Balearica gibbericeps*. We are glad to see that Mr. Evans has given full family-rank to the Hoopoes (Upupidæ), which, although no doubt closely allied to the Hornbills, have every claim to it. We wish he had done the same in the case of the Honey-guides (Indicatoridæ), for these birds, although coming near the Barbets (as first pointed out 'Ibis,' 1870, p. 176), should be recognized as forming a quite distinct family.

As regards the illustrations in the present volume, Mr. Lodge's work is good, and we should have been glad to have seen more of it. We also recognize some familiar objects in a series of wood-engravings by Smit (from 'Nature'). These blocks were prepared by that well-known artist, from specimens living in the Zoological Society's Gardens, for the illustration of a special series of articles upon new additions to the Society's Menagerie. Some acknowledgment might have been made of this fact, and Smit's name should, in our opinion, have been mentioned.

72. *Girtanner on the Bearded Vulture in Switzerland.*

[Die Lämmergeier in den Schweizeralpen und in den Zeitungen. Von Dr. A. Girtanner.]

This little paper, which will be of special interest to students of the European Ornis, gives us the verdict of a well-known authority that *Gypaëtus barbatus* must be pronounced to be extinct in Switzerland, though it may, of course, again occur there accidentally. The report in newspapers of its recent occurrences are all unreliable. An old mateless female killed by poison on the Bietschhorn in 1886, and a specimen captured in Canton Ticino in 1869, seem to have been the last two individuals procured, though there are reports of Bearded Vultures having been *seen* since.

73. *Hartert on Birds from Uganda and Unyoro.*

[On the Birds collected by Dr. Ansorge during his recent stay in Africa. By Ernst Hartert. Appendix to 'Under the African Sun,' by W. J. Ansorge. London: Heinemann, 1899.]

To Dr. Ansorge's interesting account of his experiences in Uganda and British East Africa, as an Officer in the Medical Service of the Government (which we recommend all our friends interested in these countries to read), Mr. Hartert contributes an Appendix on the birds which Dr. Ansorge collected in Uganda, Unyoro, and on the route up from Mombasa and down again, which he traversed several times.

The birds collected by Dr. Ansorge, which are all deposited in the Tring Museum, are referred to 216 species, of which *Numida ansorgei, Colius leucotis berlepschi, Cinnyris ansorgei,* and *Pyromelana ansorgei* are characterized as new. Many critical notes on other species are given, and the exact localities and dates are added, so that the 'Appendix' is of considerable scientific importance. Some good species of Francolins (*Francolinus gedgei* and *F. uluensis*) are in the list, also a rare Woodpecker (*Campothera tæniolæma*) from Uganda. On a coloured plate by Keulemans are figured *Cinnyris ansorgei* and *Pyromelana ansorgei.*

74. *Hartlaub on Birds from China and the Philippines.*

[Zwei Beiträge zur Ornithologie Asiens. Von Dr. G. Hartlaub in Bremen. Abh. nat. Ver. Bremen, xvi. 1898, p. 245.]

Our friend, the veteran ornithologist of Bremen, sends us copies of two more articles, under the title above given, relating to the collections of the late Herr Schmacker, which have been bequeathed to the well-known Museum of that city. The first of these contains additional information on the birds of Hainan (*cf.* Ibis, 1898, p. 302); the second relates to the ornithology of Mindoro in the Philippines, to which Schmacker on one occasion paid a short visit.

In the first paper Dr. Hartlaub writes of 20 species, mostly from Hainan, and describes as new *Siphia styani* and *Temnurus oustaleti.* The latter is what Mr. Styan and Dr. Hartlaub have previously called *Temnurus niger.* We do not quite understand why Dr. Hartlaub does not adopt Mr. Styan's suggestion to call it *Temnurus schmackeri* (*cf.* Ibis, 1893, p. 426) if it really requires a new name, which seems by no means certain. The Bremen Museum is fortunate in possessing the unique specimen of the wonderful *Arboricola ardens.*

Of the birds of Mindoro Dr. Hartlaub has compiled a complete list, so far as they are yet known, embracing the names of 177 species. He adds notes and remarks on 17 species represented in Herr Schmacker's collection now at Bremen.

An Appendix to this memoir treats of the difficult question of the Owls of the genus *Ninox.*

75. *Harvie-Brown on a Colour-Code for Zoogeography.*

[On a Correct Colour-Code, or Sortation Code in Colours. By J. A. Harvie-Brown, F.R.S.E. Proc. Intern. Congr. Zool. Cambr. 1898, p. 155.]

This is an abstract of a communication made to the International Congress of Zoology at the meeting at Cambridge last year. Mr. Harvie-Brown recommends the following colour-code for zoogeographical purposes :—

1. Arctic Realm, White.
2. Antarctic Realm, Grey.
3. Palæarctic Region, Red.
4. Nearctic Region, Brown.
5. Neotropical Region, Blue.
6. Ethiopian Region, Black.
7. Oriental Region, Green.
8. Australian Region, Yellow.
9. Madagascarian Subregion, Purple.

A set of special labels for Subregions is added. These are of course of minor importance, but as regards the Regions we think that Mr. Harvie-Brown's proposals are well worthy of acceptance, and the Madagascarian (or Malagasy) Subregion might certainly have a colour to itself, for which "Purple," as suggested, may do very well.

It is convenient to know that Messrs. Hugh Stevenson and Sons (Bridge Street, Ardwick, Manchester) are ready to supply pamphlet-cases, book-protecting cases, and other boxes covered according to "Harvie-Brown's Correct Colour-Code."

76. '*Irish Naturalist.*'

[The Irish Naturalist, a Monthly Journal of general Irish Natural History. Edited by G. H. Carpenter and R. Lloyd Praeger. Vol. vii. No. 12; Vol. viii. Nos. 1–4. Dublin: Eason & Son, Limited, 1898–99.]

In the January number Mr. R. J. Ussher's interesting account of his further discoveries of the remains of the Great Auk (*Alca impennis*) in the kitchen-middens of the South of Ireland is followed by descriptions by Mr. W. J. Knowles of bones of this extinct bird from Whitepark Bay, Co. Antrim, in the North ; so that the Garefowl must have been at one time a thoroughly Irish species. Both these papers are illustrated. Mr. Barrett-Hamilton announces that some birds' bones from the Ballynamintra and Shandon caves have been identified as those of the Black Grouse (*Tetrao tetrix*) and the Ptarmigan (*Lagopus mutus*); and this is especially interesting, inasmuch as these species are not known to have been found in Ireland within historic times. Moreover, attempts to introduce these birds have failed, as stated by the same author in a paper in the February number. Mr. R. J. Ussher points out that a supposed Nightingale shot near the Old Head of Kinsale in September 1876, and for more than twenty years exhibited as such in the Museum of Queen's College, Cork, is really an example of the Rufous Warbler (*Aedon galactodes*); and this occurrence coincides with that of the bird obtained at Slapton, South Devon, on the 12th of October of the same year, 1876. In the March and April numbers there are no ornithological articles.

77. *Jhering on the Birds of S. Paulo, Brazil.*

[As Aves do Estado de S. Paulo. Por H. von Jhering. Rev. Mus. Paul. iii. p. 113 (1898).]

The promised memoir on the birds of the Province of São Paulo in Southern Brazil, which was mentioned by Dr. H. v. Jhering in his letter to us ('Ibis,' 1898, p. 456), has been published in the third volume of the 'Revista do Museu Paulista'—a periodical lately established and conducted by the same energetic naturalist. It makes an important addition to our knowledge of the South Brazilian Ornis.

After some preliminary remarks on previous authorities on the birds of S. Paulo, and the technical terms proposed to be employed in describing them, the author gives us his synopsis of the species as yet known to occur within the limits of the State—590 in all, which (nearly according to the B.M. Catalogue) he arranges in the following Orders:—

Passeres	292	Columbæ	11
Macrochires	49	Gallinæ	7
Pici	17	Paludicolæ	14
Coccyges	30	Limicolæ	22
Psittaci	24	Gaviæ	12
Striges	14	Tubinares	4
Accipitres	43	Pygopodes	3
Steganopodes	4	Impennes	1
Herodiones	24	Crypturi	10
Anseres	8	Rheæ	1

Short descriptive notes are added to the name and selected synonyms of each species, and the locality in S. Paulo in which it occurs is stated, but no field-notes as to habits and nesting are given. Two (rather doubtful) species are described as new—*Chrysotis schmidti,* from between the Rio Morto and Itapura, and *Crax sulcirostris,* from the eastern part of the State, concerning both of which further information would be desirable. We are surprised to see *Palamedea cornuta* in the list, as we had believed it to be strictly an Amazonian species.

From the concluding remarks in this memoir, and from a paper recently communicated to the Zoological Society of London, we gather that according to Dr. v. Jhering's views three elements are to be found in the avifauna of S. Paulo —a Northern, a Southern, and a Central. The Central element, which is that of the Campos of the interior, embraces about 70 species; the remainder, after deducting about 200 species of extended distribution, being assignable to the Northern or Southern Faunas. The former of these is represented by species of *Donacobius, Hylophilus, Dacnis, Calliste, Nemosia, Pipra,* &c.; the latter by species of *Poospiza, Cyanotis, Phlœocryptes, Anumbius,* and other well-known Argentine forms.

78. *Madarász on a new Ground-Thrush.*

[Description of a new Ground-Thrush (*Geocichla frontalis*). By Dr. Julius v. Madarász. Term. Füz. xxii. p. 111.]

This supposed new species is based upon a pair of birds in the Hungarian National Collection, which were acquired two years ago along with other skins from Celebes, without any more definite locality. *Geocichla frontalis* appears to be most nearly related to *G. erythronota* Sclater, but to differ in its black forehead; it may, however, possibly be only a fully adult male of the latter species.

79. *Nehrkorn's Catalogue of his Egg-collection.*

[Katalog der Eiersammlung, nebst Beschreibungen der aussereuropäischen Eier. Von Adolph Nehrkorn. 8vo. Braunschweig, 1899.]

The great Collection of Eggs of Herr Nehrkorn, of Riddagshausen, near Brunswick, is known to many English ornithologists, as is likewise the kind hospitality of its owner. Herr Nehrkorn has long been engaged on an account of his collection, and has now brought his labours to a successful conclusion in the volume before us.

The collection, which is one of the largest, if not quite the largest on the Continent, and is surpassed in extent only by that of the British Museum *, and perhaps by that of Mr. Philip Crowley, in England, contains examples of the eggs of 3546 species of birds. These are arranged and named in this work according to the British Museum 'Catalogue of Birds,' and references are given to the volumes and pages of the Catalogue throughout the list. Besides the name of the species the general locality is given, but the number of specimens of each species and their exact localities are only occasionally inserted. Short but most useful descriptions are added of the eggs of exotic species, and at the head of the genera and families the general character of the eggs of the group is in many cases summarized. Among the special rarities of the collection we observe eggs of *Cœreba cyanea* from Amazonia (of an almost uniform black); of *Lophotriccus squamatus* (most beautifully zoned with rich red); of *Eurystopodus nigripennis* (a Goatsucker from the Solomon Islands); of a Toucan (*Pteroglossus flavirostris*), the first of this family described, so far as we know; and of two Touracous. These eggs have attracted our notice on turning over the pages of the list, but there are, no doubt, many others of equal importance.

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* *Cf.* 'Ibis,' 1897, p. 486.

Finally, four beautifully drawn and excellently coloured plates contain figures of 50 of the principal novelties of the Nehrkorn Collection. We are sure that all our oological friends will be charmed with this well-planned and well-executed piece of work.

80. *North on the Nesting of Australian Birds.*

[Descriptions of the Nests and Eggs of Four Species of Australian Birds. By Alfred J. North, C.M.Z.S. Proc. Linn. Soc. N. S. Wales, 1898, p. 380.]

Mr. North continues his notes on the nests and eggs of Australian Birds, and now describes those of *Ephthianura crocea, Ptilotis macleayana*, and *Myzomela erythrocephala* from Northern Australia, and the eggs of *Lophophaps ferruginea* obtained by the Calvert Expedition near Fitzroy River, North-west Australia.

81. *North and Keartland on the Birds collected by the Calvert Expedition.*

[List of Birds collected by the Calvert Exploring Expedition in Western Australia. By Alfred J. North, C.M.Z.S. With Field-notes by G. A. Keartland, Naturalist to the Expedition. Trans. R. Soc. S. Australia, 1898, p. 125.]

Mr. North gives us an account of the collection made by Mr. Keartland, chiefly at a camp situated at the junction of the Fitzroy and Margaret rivers, about 45 miles from Derby in North-western Australia, during the Calvert Expedition, and deposited in the South-Australian Museum. It consists of 167 specimens, belonging to 59 species, besides nests and eggs. The field-notes of the collector are added under the head of each species. Among the chief rarities are specimens of *Spathopterus alexandræ* and *Ptilotis keartlandi.* Field-notes on 133 other species, of which specimens were observed by Mr. Keartland but not brought back, are added.

82. *Reichenow on the Birds of the Irangi Expedition.*

[Die mittleren Hochländer des nördlichen Deutsch-Ost-Afrika. Wissenschaftliche Ergebnisse der Irangi-Expedition 1896–97, nebst kurzer Reisebeschreibung. Im Auftrage der Irangi-Gesellschaft herausgegeben von dem Führer der Expedition C. Waldemar Werther. 4to. Berlin: Hermann Paetel, 1898.]

Among the many valuable scientific contributions to Herr Premier-Lieutenant C. Waldemar Werther's recently published narrative of the 'Irangi-Expedition' (during which the northern highlands of the interior of German East-Africa were explored) is a memoir by Prof. Reichenow on the birds collected during the expedition. The specimens are referred to about 45 species, amongst which one (*Pyromelana wertheri*) was new to science, but had been already described (Orn. Monatsb. 1897, p. 160). In the course of the remarks given in the present volume *Terpsiphone perspicillata suahelica,* from East Africa, and *T. p. plumbeiceps* and *Melanobucco torquatus congicus,* from Western Africa, are designated as new subspecies.

At the close of his account of the collection made during the Irangi Expedition Prof. Reichenow gives a list of about 70 species of birds to be added to the avifauna of German East Africa since the publication of his 'Vögel Deutsch-Ost-Afrikas' in 1894.

83. *Schalow on Birds from Chile and Patagonia.*

[Die Vögel der Sammlung Plate. Von Herman Schalow. Zool. Jahrb., Suppl. iv. Heft 3, 1898.]

In this memoir we have an account of the birds collected by Prof. Plate in Chile, Patagonia, Tierra del Fuego, and the Falkland Islands, and transmitted to the Berlin Museum. From localities so well worked it was not to be expected that novelties would be procured; but the series of 335 specimens, which are referred to 148 species, gives ample opportunities for the valuable notes and critical remarks of Herr Schalow. Several additions are made to the lists of the birds of Chile and Patagonia, and important accessions to the ornis of Tierra del Fuego are reported. We do not, however, consider that it has yet been conclusively shown that the northern Waders (*Numenius hudsonicus, Limosa hudsonica, Tringa canutus, T. fuscicollis*, &c.), which are occasionally found in Patagonia in the summer, actually *breed* there. That they occur there in the breeding-season is no proof of this at all, as we know by experience in the Old World. Let us wait until some diligent field-ornithologist has been out there and brought home their nests and eggs.

The second portion of Herr Schalow's memoir is devoted to an accurate revision of the birds of Juan Fernandez, where about 10 species are now known to occur.

84. *Sharpe's Wonders of the Bird-world.*

[Wonders of the Bird-world. By R. Bowdler Sharpe, LL.D., F.L.S., &c. With Illustrations by A. T. Elwes. 8vo. London: Wells Gardner, Darton & Co., 1898.]

Dr. Bowdler Sharpe, being obliged to give up "the strain of speaking in public," has put the gist of his well-known lectures on the curiosities of bird-life into the volume now before us, which we are sure will be much appreciated by all who are interested in birds and their ways of life. Chapters are given on birds wonderful both in shape and in decoration, on their playing-grounds, their nests and eggs, their courtship and dances, their mimicry and protective resemblances in colour, their migration and their geographical distribution. Many of the particulars on these subjects are, of course, well-known stories; but even the most experienced authority on birds will not fail to gather fresh information from these well-filled pages. The illustrations, drawn by Mr. A. T. Elwes, are numerous and mostly well executed, though exception might be taken to some of them. We are specially pleased with the "suggested restoration of *Phororachus*" from Mr. Pycraft's sketch and with the "Wood-Hoopoes and Cobra," not to mention the ejection of its companion-nestlings by the young Cuckoo, taken from Mrs. Hugh Blackburn's spirited sketch.

The systematic review of the orders and families of birds, with special indications of their nesting-habits and eggs, makes an interesting chapter which might be almost indefinitely expanded. But it is not quite correct to say that in all the Ratitæ incubation is performed by the male bird only, as there is, we believe, no doubt that in the case of the Ostriches both parents sit in turns.

No more attractive present could, in our opinion, be given to a youthful ornithologist than a copy of 'Wonders of the Bird-world.'

85. *Shufeldt on the Classification of Birds.*

[Observations on the Classification of Birds. By Dr. R. W. Shufeldt. Proc. Ac. Nat. Sci. Philad. 1898, p. 489.]

Dr. Shufeldt discusses a great subject in a few pages, and promulgates several points of doctrine that we generally approve, especially as regards the worthlessness of single anatomical characters in avian anatomy. But we do not agree that the Loons and Grebes have much to do with the Pelicans; and we wish that Dr. Shufeldt would not write "affined," as there is no such word in the English language.

86. *Stone on the Moulting of Birds.*

[The Molting of Birds, with special reference to the Plumages of the Smaller Land-Birds of Eastern North America. By Witmer Stone. Proc. Ac. Nat. Sci. Philad. 1896, p. 108.]

Our attention has been called to the fact that the receipt of a copy of Mr. Witmer Stone's paper on the moult of birds, published in 1896, was acknowledged, but that the memoir was never reviewed. We regret that this important treatise on a subject of great interest was overlooked, but can now only say that it embraces the results of long and careful studies on this difficult question, and should be consulted by all who are interested in the moulting of birds. Mr. Stone is a strong opponent of the theory of the direct change of colour in feathers without moult, advocated by Schlegel, Gätke, and many other well-known ornithologists.

XXXIX.—*Obituary*: Prof. O. C. MARSH, Mr. W. E. BROOKS, Mr. JOSEPH WOLF, and Mr. H. B. HEWETSON.

OTHNIEL CHARLES MARSH.—The excellent piece of work upon the Toothed Birds of the Cretaceous System of Kansas, published in 1880, has rendered the name of our Foreign Member, Prof. Marsh, well-known to all ornithologists. Othniel Charles Marsh, as we learn from a notice recently published in 'Nature,' was born in America in 1831, and was educated at Yale College, though he afterwards studied geology and palæontology at Berlin, Breslau, and Heidelberg, and thus widely extended his sphere of knowledge on these subjects. He was appointed to the Chair of Palæontology in the University of Yale in 1866, and held this important post until his death on the 18th of March last. He was also palæontologist to the U.S. Geological Survey for many years.

The name of Marsh (along with those of Leidy and Cope) will remain for ever illustrious in the annals of zoology for his long and remarkable series of discoveries in the extinct fauna of Western America. Marsh was not only an able writer on this subject, but also a most active and intrepid explorer, and is said to have crossed the Rocky Mountains in pursuit of his scientific work no less than twenty-one times between the years 1869 and 1888. As already stated, his claim to ornithological fame rests upon his monograph of the Odontornithes. In this quarto volume the astonishingly perfect skeletons of the extinct birds of the genera *Ichthyornis* and *Hesperornis*, which had been exhumed under his care from the Cretaceous beds of Kansas, were admirably figured and described.

Marsh was a Fellow of the Geological Society, a Member of the British Association, and a Corresponding Member of the Zoological Society, and was also a frequent visitor to Europe, where he had many friends. He attended the meeting of the International Zoological Congress last year at Cambridge, and many of us had the pleasure of greeting him there, little thinking that it would be for the last time we should meet our friend.

William Edwin Brooks, formerly well known for his excellent work on the birds of British India, a Member of the British Ornithologists' Union, and a frequent contributor to this Journal, died at his residence, Mount Forest, Ontario, Canada, on the 18th of January last. Brooks was born in Ireland, near Dublin, on the 30th of June, 1828, but his parents were from Northumberland, and he spent his boyhood in that county. He was a civil engineer by profession, and was engaged for many years in the service of the East Indian Railway Company. From 1868 to 1880, during which period he was mostly resident at Etawah, in the North-west Provinces of India, Brooks devoted all his leisure time to observing and collecting birds, and was one of Mr. Hume's most valued coadjutors, having contributed 27 papers to 'Stray Feathers' from 1873 to 1880. At the same time he was sending frequent communications to the 'Proceedings' of the Asiatic Society of Bengal, and to this Journal. In 1881 Brooks retired from the Company's service and emigrated to Canada, where he resided until the time of his decease, mostly in the province of Ontario, though at one time he moved over into British Columbia. One of Brooks's latest communications to the 'Ibis' was in 1894, and related to the species of *Phylloscopus*, on which difficult group he was recognized as a special authority.

Joseph Wolf, "without exception," in the words of Landseer, "the best all-round animal painter that ever lived," died at his rooms in Primrose-Hill Studios on the 20th of March last, at the age of 79. Wolf was a German by birth, the eldest son of Anton Wolf, a farmer of Moerz, in Rhenish Prussia. Showing but little taste for his father's pursuits, Wolf, at the age of 16, was apprenticed to a lithographer at Coblenz. Here his powers of observation and delineation of animal-life were quickly recognised, and before long obtained him ample employment as a draughtsman.

The first piece of work which brought Wolf's name prominently before the scientific world was Rüppell's 'Systematische Uebersicht der Vögel Nord-Ost-Afrika's,' published at Frankfort in 1845. The lively and characteristic attitudes in which the fifty plates of birds comprised in this volume are depicted stand out in strong contrast to previous attempts of the same description, and are universally recognized as having instituted a completely new style of ornithological drawing. The figures of the birds in Temminck and Schlegel's 'Fauna Japonica' and those of the Hawks in Schlegel's 'Traité de Fauconnerie' still further increased Wolf's reputation, and the new artist was invited to come to England and complete the drawings for G. R. Gray's 'Genera of Birds,' which Mitchell was unable to continue owing to his appointment as Secretary of the Zoological Society. Wolf arrived in London in 1848, and prospered so well there that he never left it again, residing first in Howland Street, Fitzroy Square, and afterwards in Berners Street. In 1874 he removed to The Avenue, Fulham Road, but finding this too far from the Zoological Society's Gardens—his favourite place of study—he selected some chambers at Primrose-Hill Studios in 1878, where he passed the rest of his life. It is useless to sing the praises of Wolf's pencil to Members of the British Ornithologists' Union. They are all well aware that a large measure of the success attained by the present Journal in its earlier days must be attributed to Wolf's inimitable illustrations. The first plate in the first number of the First Series of 'The Ibis,' representing *Gymnoglaux nudipes*, was drawn by Wolf, and for the succeeding ten years his services were constantly given to us. Altogether he contributed upwards of 70 plates to 'The Ibis,' and ceased to render us his much valued assistance only because he gave up drawing on lithographic stone for branches of his profession which involved less attention to minute details not always of an artistic character. The last plate put on the stone by Wolf himself for 'The Ibis' was that of *Hypo-*

triorchis eleanoræ in the volume for 1869. Soon after this date also Wolf declined to draw on stone any more for the Zoological Society, but continued to prepare sketches for the 'Proceedings' and 'Transactions,' which were lithographed by Smit under Wolf's eye. For some account of the enormous amount of other first-rate work executed by Wolf every year of his life in London, until increasing age and infirmities slacked his masterly hand, we must refer our readers to 'The Life of Joseph Wolf' by A. H. Palmer, published in 1895, and illustrated by copies of many of his beautiful lithographs. We may, however, in conclusion, remind our readers that, besides scientific works, numerous volumes on sport and travel have been entirely or mainly illustrated by this industrious artist. Of these we may name Andersson's 'Lake Ngami,' Livingstone's 'Missionary Travels,' Atkinson's 'Amoorland,' Emerson Tennent's 'Ceylon,' Baldwin's 'African Hunting,' Bates's 'Naturalist on the Amazons,' and Wallace's 'Malay Archipelago,' while his splendid pictures of animal-life in oil, water-colour, and crayon are scattered widely over England among the mansions of those who were sagacious enough to appreciate the talents of this unrivalled delineator of birds and mammals.

In private life Wolf was a quiet, unassuming man, of generous and unselfish disposition, and always ready to help his younger brethren in the profession. He was much loved by a select circle of friends, with whom he had sympathetic tastes in art and science. Perhaps the most curious feature of Wolf's career was that he was never elected a member of the Royal Academy. But this fact, in our opinion, must be attributed rather to the want of discrimination of that illustrious body than to the discredit of Joseph Wolf.

HENRY BENDELACK HEWETSON, who was elected a Member of the British Ornithologists' Union in 1897, and was much attached to the study of birds, died at his residence in Leeds on the 15th of May last at the early age of 42 years. Mr. Hewetson was well known as an eminent oculist, and had achieved great success by his skill in the treatment of diseases of the eye and ear. He was one of the honorary surgeons of the Leeds Infirmary, and in full practice in that city. Mr. Hewetson was also an artist of some repute, and in spite of his professional engagements found opportunities for travels and researches on the Continent and in Egypt.

XL.—*Letters, Extracts, Notices, &c.*

We have received the following letters, addressed "to the Editors of 'The Ibis'":—

Sirs,—As you may have seen by 'The Auk,' the next meeting of the A. O. U. is to be held at Philadelphia—the first time it has ever met here—the "cradle" of American ornithology, where so much was accomplished in the past. I hope that if any of our English friends are thinking of visiting America this autumn they will arrange to be in Philadelphia on November 13th, 1899. I can assure them of a warm welcome.

Yours &c.,
Witmer Stone.

Academy of Natural Sciences, Philadelphia,
February 18th, 1899.

Sirs,—I am able to inform you with very great satisfaction that the suggested Ornithological Meeting in Serajevo will take place on the 25th of September next, and last until the 29th. The letters of invitation will be sent out very shortly.

Yours &c.,
Otto Herman,
Chief of the H. C. B. for Ornithology.

Hungarian Central Bureau,
Budapest, March 22nd, 1899.

Sirs,—In his 'Manual of the Game-birds of India' Mr. E. W. Oates raises the question whether the species of *Galloperdix* in life carry the tail like a fowl or like a Partridge, *i. e.* folded vertically or flat. The Calcutta

Zoological Garden has recently acquired two males of *G. lunulata*, and from observation of these I can state that the form of the tail is Partridge-like, though, as I have seen one of the birds carrying it more raised and with the feathers lying less closely upon each other than the other, it is possible that it may on occasion assume a more or less vertically folded form; but such is not the ordinary form, at any rate with these two birds.

While on the subject of Indian game-birds, I may mention that the Indian Museum has lately acquired three specimens of the very rare *Microperdix manipurensis*, from Manipur. One of these was received from Captain H. S. Wood, I.M.S., who has shot, he says, over a hundred; and two from Lieutenant H. H. Turner, who has others. Lieutenant Turner has also shown me a specimen of *Coturnix japonica* recently procured in Manipur.

I ought to mention that Captain Wood states, in the letter accompanying his welcome donation, that he was indebted to Mr. Oates's Manual for his identification of his bird—an early tribute to the usefulness of this excellent little work.

Yours &c.,

F. Finn.

Indian Museum, Calcutta,
April 20th, 1899.

Sirs,—Between the last week in January, this year, and the 23rd of March, a flock of about thirty Sand-Grouse (*Syrrhaptes paradoxus*) frequented a comparatively limited area on the Lincolnshire North Wolds, in the same parish and on the same farm where they first appeared in 1888. Their chief haunt has been a sandy field of twenty-five acres, recently laid down for permanent pasture, on the northern slope of the wold, and in a very retired situation.

The birds were first seen by the rabbiter (Grimoldly), who recognized them at once, having obtained five in the same locality in 1888, one of which I got (the rest, alas! were eaten). They were subsequently seen and accurately described to me by other competent observers.

I drove over on two occasions and examined the field; but was not fortunate in seeing the Sand-Grouse, although I found indications of their recent presence, and some feathers, which I sent to Professor Newton for confirmation.

On asking the shepherd on the next farm whether he had seen any strange birds about, he at once replied, "Do you mean the Sand-Grouse, sir?"; and on my replying "Yes," said he had done so several times, and recognized them as the same birds, one of which he had got, seen in 1888. He further said they were much tamer during the arctic weather (snow and frost) in March, and used to come to some wheat-stacks placed in a row on the wold-side, and once he saw them in the paddock near his cottage. He had got so near as to see their "little woolly feet," and once watched them following in file, like Partridges, down a furrow; but they "wobbled about" a good deal and did not walk steady. He thought they left the farm with the break-up of the storm later in March. They had a curious cry.

During their stay on the wold they used almost daily to take a flight of about a mile to two fields sown with wheat. Here they were repeatedly flushed by competent observers, all of whom remarked on their peculiar pointed wings and very rapid flight.

The district is so extensive, lonely, and thinly populated that, now the corn is sown, they might remain for months without again coming under observation.

When I was at Flamborough Head in April, Mr. Matthew Bailey, of that place, said a man (Mainprice) had observed a flock of what he at first thought were Golden Plover, in March; but on walking towards them he saw he was mistaken, and, when they rose, that they were Sand-Grouse, the same as those which he had shot in 1888.

P.S.—Subsequently to writing this letter I have been told of a single Sand-Grouse seen on May 19th, on the adjoining farm to that on which they first appeared in February this year; also of a small flight seen in the Spurn district on the evening of May 13th.

Dr. Ritter von Tschusi zu Schmidhofen [Ornithol. Jahrb.

x. 1899, Heft 2] records the fact of small flights of "Steppenhühner" having been repeatedly met with in the district of Bruck, a. d. L., and one also killed in Rohrau, Lower Austria-Hungary, about the end of July in 1898.

Yours &c.,
JOHN CORDEAUX.

Great Cotes House, R. S. O., Lincoln,
May 9th, 1899.

SIRS,—In your notice of Mr. Hett's 'Dictionary of Bird Notes' ('Ibis,' 1899, p. 136) you say that you never before heard of a "murmuration" of Starlings. The term is given (with many others) by Daniel, who writes: "There was a peculiar kind of *Language* invented by Sportsmen of the middle Ages, which it was necessary for them to be acquainted with; and some of the Terms are still continued." ('Rural Sports,' vol. iii. p. 314.)

Yours &c.,
O. V. APLIN.

Bloxham, Oxon,
May 17th, 1899.

SIRS,—I have to-day received the April number of 'The Ibis,' and read therein Mr. Blanford's letter. I can assure you that no one was more astonished than myself to find that I had casually come across forty "Swans" in the month of April last year. I allow that I made a great mistake in not writing either "Crane" or *Grus antigone* after the word Sarus.

Mr. Blanford is quite correct when he says that I overlooked the Tern-names on p. 306 of his work. I did so, for the very good reason that I never expected to find them there, but under their separate species as usual. 'Jerdon' I had not by me at the time. "Pancheera" I knew had been reported before. I only put it in to emphasize the fact that the word "Titri," or "Tihari," or "Tehari," did not apply to them. As a matter of fact, "Pancheera" is used indiscriminately by the boatmen for all the Terns.

It may interest those who have read my previous account to learn that I went to Fatehgarh again this year, on April 4th, and obtained eggs of the following species:—

2 Skimmer. *Rhynchops albicollis.*
6 Large River Tern. *Sterna seena.*
3 Black-bellied Tern. *Sterna melanogaster.*
3 Little Swallow Plover. *Glareola lactea.*
27 Spur-winged Plover. *Hoplopterus ventralis.*
3 Lesser Ringed Plover. *Ægialitis dubia.*
2 Great Indian Stone-Plover. *Esacus recurvirostris.*

All the few eggs were fresh, except one clutch (3 !) of *Hoplopterus ventralis* and the clutch of *Esacus recurvirostris.* The Ganges had shifted its course nearly ¼ mile, and I only found one island. In consequence the birds bred on the peninsulas.

On the one island mentioned I found a nest of *Hoplopterus ventralis* with 5 fresh eggs. While drifting down the stream I saw a pair of Indian Coursers (*Cursorius coromandelicus*) running along the edge of the water. I shot one (♀), so that I am sure of the identity of the bird. Is this not rather a curious locality for a Courser?

Yours &c.,
William Jesse.

La Martinière College, Lucknow, India,
May 1st, 1899.

Sirs,—On the 23rd of last month (April 1899) a fine female specimen of *Caprimulgus ægyptius* (Licht.) was brought to me, in the flesh, by a friend of mine who had shot it himself that morning near Palermo.

This is apparently the second undoubted instance of the occurrence of this species in Sicily and the Italian Kingdom, the first being that of an example obtained at Modica, near Syracuse, in December 1879, which specimen is now in the Royal Zoological Museum at Florence (Giglioli, Avif. Italica, 1886, p. 197).

Prof. Doderlein (Avif. Mod. e Sicil. p. 344) also alludes to a bird, which may have been of this species, as having been obtained near Girgenti; but no proper identification of this specimen seems to have been made, nor do we even know whether the skin was preserved.

In Malta the Egyptian Nightjar has apparently occurred occasionally, Prof. Giglioli (*op. cit.*) having noticed three examples of the species in the Valletta University Museum, said to have been obtained in the island in 1876.

In England the species has been recorded as having occurred once (Whitaker, 'Zoologist,' 1883, p. 374).

From Heligoland it has also been recorded once (Seebohm, 'Ibis,' 1877, p. 163).

Out of Europe *C. ægyptius* is apparently common in Egypt and Nubia (Shelley, B. Egypt, p. 175; Heuglin, Orn. N.O.-Afr. i. p. 128), and also in Turkestan (Severtzoff, 'Ibis,' 1875, p. 491; Dresser, B. Eur. iv. p. 629).

In Algeria and Tunisia the species occurs, and in some of the more southern districts may be considered as fairly common (Koenig, Reis. u. Forsch. in Algerien, p. 66; Whit. 'Ibis,' 1895, p. 102).

I have no knowledge of its occurrence in Morocco.

In conclusion, I may observe that the Sicilian example of *C. ægyptius,* which is the subject of this letter, is of the very pale isabelline form, and is identical in colour with a specimen I have from South Tunis.

Yours &c.,

Joseph I. S. Whitaker.

Palermo, 23rd May, 1899.

Note on Coccyzus euleri.—*Coccyzus euleri* Cab. (J. f. O. 1873, p. 73) is referred to *C. americanus* in the British Museum 'Catalogue of Birds' (vol. xix. p. 309), but is really quite distinct and easily recognized by its smaller size and the absence of rufous on the remiges. The bird was renamed by Dr. J. A. Allen as *C. lindeni* (Bull. Essex Institute, viii. 1876, p. 78), the identity of the two having been pointed out by Chapman ('Auk,' viii. p. 159). The latter also recorded an additional specimen in the collection of the American Museum of Natural History, from Matto Grosso, Brazil.

Another specimen, lately received at the Academy of Natural Sciences of Philadelphia from the interior of British Guiana, extends the range of the species very materially. Being interested in looking up the history of this little-known bird, I wrote to Dr. P. L. Sclater to ascertain whether any specimens had reached the British Museum since the publication of the nineteenth volume of the Catalogue. I was pleased to learn from him that one specimen from Aruwai, interior of British Guiana, had been obtained by the well-known collector Whitely on June 24, 1889. Cabanis's original specimen came from Cantagallo, Province of Rio, Brazil. The species has evidently a wide range, though apparently very scarce.—WITMER STONE, Acad. Nat. Sci., Philadelphia.

Quintocubitalism.—On this difficult point in the construction of the bird's wing two important communications were made to the Linnean Society on the 16th of March last, when Mr. P. Chalmers Mitchell, F.L.S., read a paper on so-called "quintocubitalism" in the wing of birds. He showed that the terms "aquintocubital" and "quintocubital," applied to birds because of certain conditions in the wings, were misleading, and proposed the new terms "diastataxy" and "eutaxy." Although the *Columbæ* are stated to be a diastataxic group, he remarked that "eutaxy" occurs in seven species, and that intermediate conditions exist, which suggested the probability that "eutaxy" is a secondary condition produced by the closing up of the gap in the distataxic form. From general considerations based on the anatomy and osteology of *Columbæ*, he concluded that the eutaxic forms were clearly more highly specialized and that they had been derived from diastataxic forms. Comparative anatomy making it exceedingly probable that "diastataxy" is the primitive condition among birds, Mr. Mitchell proceeded to show that the primitive existence of a gap was not difficult to explain. In the case of the scales on the feet of birds, and on the limbs and digits of reptiles, a general arrangement was the distribution in transverse rows round the limb and in longitudinal rows on the digits. Where the two sets of scales meet interference occurred and led to modifications. He showed further how such interference might lead, in the case of a pentadactyle wing, to the occurrence of a gap after five secondary quills, and extended his argument to Aves generally, suggesting that "diastataxy" was "architaxy," and that "eutaxy" was a secondary modification that might easily have occurred at different times in different groups.

On the same evening Mr. W. P. Pycraft, A.L.S., read a paper entitled "Some Facts concerning the so-called 'Aquintocubitalism' in the Bird's Wing." He showed, by means of a series of lantern-slides, that "aquintocubitalism" was due to a shifting, backward and outward, of the secondary remiges 1–4 and of the horizontal rows of coverts 1–5. The result of this shifting was to dissociate all the coverts preaxial to the 5th remex, *i. e.* all the coverts collectively forming one obliquely transverse row in front of the remex: the 5th remex forming a new connection with the corresponding row immediately behind—the 6th; while the 6th remex formed a fresh union with the 7th row, and so on. Thus the 5th remex was shown to have lost its original relations with its covert, and not its existence as was supposed. The terms—suggested by Prof. E. Ray Lankester—"stichoptilous" and "apoptilous" were proposed as substitutes for the older and less convenient terms quinto- and aquintocubitalism. All wings, it was shown, are, in the embryo, stichoptilic, and later may become apoptilic. Hence the author felt inclined to regard the former as the more primitive arrangement.

Avium Generum Index Alphabeticus.—We wish to call the attention of all our friends engaged in ornithological work to the alphabetical index of the generic names used in the British Museum Catalogue of Birds which has been just issued as the ninth volume of the 'Bulletin' of the B.O.C. under the title given above. Mr. Waterhouse's careful compilation will, we are sure, be much appreciated by all who have frequent occasion to refer to the twenty-seven volumes of the Great Catalogue, and will save them much labour in turning over its pages.

Birds of Somali-land.—Mr. and Mrs. E. Lort Phillips returned to London on May 1st after passing two months in the Highlands of Somali-land. The collection of birds made on the present occasion consists of about 300 specimens, many of which—such as *Sylvia blanfordi, Buchanga assimilis, Tricholæma blandi, Telephonus jamesi, Dryoscopus funebris,* and others, as also the nests and eggs of *Eurocephalus rueppelli*—are of considerable interest, though it has not yet been ascertained that any of the specimens belong to species absolutely new to science. Further particulars of the results arrived at will be given in a future number of this Journal by Mr. Lort Phillips, who has in contemplation a general work on the Avifauna of this most interesting and most attractive country.

Birds of the Gambia Colony.—Mr. J. S. Budgett, F.Z.S., who has been on a scientific mission to the River Gambia all the past winter on behalf of the Zoological Society of London, although he devotes his chief attention to Fishes, has not neglected the Birds, and is expected to bring back a good series of skins and spirit-specimens of this Class on his return to England. We are not aware of a single authority in existence on the Birds of this much-neglected British Colony.

New Handbook of South-African Birds.—Mr. Arthur C. Stark, M.B., is preparing a new "Handbook" of the Birds of Africa south of the Zambesi, of which the first volume will shortly be ready for issue. It will form a portion of Mr. W. L. Sclater's 'Fauna of South Africa,' a work planned on the same lines as Mr. Blanford's 'Fauna of British India,' and will be illustrated by many woodcuts in the text. The publisher is Mr. R. H. Porter.

New Work on the Nests and Eggs of Australian Birds.—Mr. A. J. Campbell, of Melbourne, sends us a copy of the prospectus of his proposed new work on the "Nests and Eggs of Australian Birds," on which he has been long engaged, and which will be largely based on the author's personal observations in various parts of Australia during the past thirty years. It is likely to extend to some 700 or 800 pages royal octavo, and will be illustrated by 130 photographic plates of nests, and coloured figures of some 200 eggs.

Birds of the Western Altai.—In the account of his recent journey to the Western Altai, read before the Linnean Society on the 15th of December last (see Journ. Linn. Soc., Zool. xxvii. p. 23), Mr. Elwes has done well in inviting our attention to this interesting country, which is now rendered easily accessible by the extension of the Trans-Siberian Railway to the banks of the Ob, up which Barnaul, the capital of the district, is readily reached by steamer. Mr. Elwes devotes but few remarks to the birds met with in the upper valleys of the Ob which he explored, and says they were "not so numerous as he expected," although "Cranes and Ducks were plentiful in the marshes." He found a Scoter breeding, which he refers to the eastern form of the Velvet Scoter, the *Œdemia stejnegeri* of Ridgway*. Game-birds were "very scarce," but the Capercaillie, the Ptarmigan, and the Quail were observed, and *Tetraogallus altaicus* inhabited the highest and barest parts of the mountains. A single pair of *Perdix barbata* with newly-hatched young were seen in a marshy larch-wood on July 18th.

When Mr. Elwes says "no ornithologist has worked out the birds of the Altai," he must have quite forgotten our friend Dr. Finsch, who visited this district in 1876, and has given an excellent account of his expedition in his 'Reise nach West-Sibirien' (Berlin, 1879). Dr. Finsch and his party went up the Irtish watershed, and, crossing over to the headwaters of the Ob, descended to Barnaul. Dr. Finsch's article on the birds of Western Siberia (Verh. zool.-bot. Ver. in Wien, xxix. p. 128) enumerates 273 species and contains ample notes.

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* *Œ. carbo* (Pall.) of Salvadori, B. M. Cat. xxvii. p. 411.

The Mode of Incubation of the Ostrich.—It being still the prevailing idea, even among the most recent authorities*, that the Ostrich (*Struthio*) is polygamous, and that the male performs the whole duty of incubation, it may be useful to give publicity to the subjoined extract from Mr. Cawston's 'Ostrich-Farming in California,' as to the habits of this bird on the thriving Ostrich-farms of Norwalk and South Pasadena near Los Angeles :—

"Early in the year, just as spring dawns, a pair will begin to build a nest, or rather to scrape one out of the ground. The male bird rests his breast-bone on the ground and kicks the sand behind; when one side is sufficiently deep he turns around and operates in a like manner, until a round hole about three feet in diameter and one foot deep is the result of his exertions; occasionally he intimates to the female that help is required, and they take turns. The hen forthwith begins to lay an egg every other day, until twelve or fifteen are located side by side in this hole in the ground; they scatter a little sand over the eggs to protect them from the fierce rays of the Californian sun; this habit has doubtless led to the supposition, printed in many ancient natural histories, that the eggs of the Ostrich are hatched by the sun, unaided by the birds. As soon as the full number of eggs are laid the couple share the labour of hatching, the male bird sitting on the eggs from 4 o'clock in the afternoon until 9 o'clock the following morning; and it may be understood with what skill this is performed when it is remembered that 250 pounds weight of Ostrich is bearing down upon fourteen eggs. At 9 o'clock the hen takes his place. The male Ostrich, however, with remarkable intelligence, relieves the female for an hour in the middle of the day, while she goes in search of the necessary nourishment. A pair will follow this *régime* with the greatest regularity for about forty days, when the chicks can be heard—telephoning as it were—in the shells. Frequently the chicks break the shells themselves, but often the hen can be seen pressing on the shell with her breastbone to assist the youngster in making his *début* into the glorious climate of California."

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* Newton, Dict. Birds, p. 664; Evans, 'Birds,' p. 29; Royal Nat. Hist. iv. p. 559; Sharpe, 'Wonders of the Bird-world,' p. 16.

Birds living in the Zoological Society's Gardens.—In the aviaries of the Zoological Society of London there are at present several birds of considerable interest. A Ring-Ouzel, acquired in August 1894 in young plumage, turns out to belong to the Alpine form, *Turdus torquatus alpestris*. It is now in full dress in the British-birds Cages, where it has as its next neighbours two Nutcrackers (*Nucifraga caryocatactes*), apparently of the long-billed form, if the two forms can always be discriminated. Hard by, in the Western Aviary, are examples of two scarce Ducks, *Biziura lobata* of Australia and *Rhodonessa caryophyllacea* of India, the latter a male in fine plumage. The Bower-birds have also lately made a most beautiful playing-place. In the Insect-House may be seen (and *heard*) a fine adult male of the Bell-bird of Guiana, celebrated by Waterton (*Chasmorhynchus niveus*). The curious caruncle on its forehead, now fully developed, hangs on either side of its bill, and is often retracted, when it forms little more than a warty excrescence. Its remarkable voice can be heard all over the Gardens, and is quite distinct from that of the Brazilian *Chasmorhynchus nudicollis*, an example of which may be seen in the same house.

The Parrot-House (overfull, as usual) contains, among the large series of *Psittacidæ*, examples of such rarities as *Palæornis derbiana* from China, *Psephotus chrysopterygius* from Australia, *Nymphicus uvæensis* from the Loyalty Group, *Chrysotis pretrii* from Brazil, *Conurus rubro-larvatus* from Ecuador, and a pair of Carolina Conures (*Conuropsis carolinensis*), sometimes supposed to be extinct. Three Mountain Ka-kas (*Nestor notabilis*) are occasionally indulged with mutton-chops. In the series of large cages at the back will be found examples of four or five species of Toucans and a nice pair of Hornbills (*Lophoceros nasutus*), also a bright-coloured Hunting-Crow (*Cissa venatoria*).

The Great Aviary is now fully occupied, and five or six pairs of the Glossy Ibis (*Plegadis falcinellus*) are nesting on the trees. Some of the young birds are already hatched. In the Great Aviary also may be observed three examples of the White Sheathbill (*Chionis alba*) and a Jameson's Gull (*Larus jamesoni*) sitting on her nest. There are also to be seen Flamingoes, White and Scarlet Ibises, and other well-known inhabitants of this fully-stocked aviary; and hard by, in the Eastern Aviary, a Great Black-headed Gull (*Larus ichthyaëtus*), lately received from the Suez Canal.

In the Fish-House, among the Waders, may be noted a fine specimen of the Grey Plover (*Squatarola helvetica*) in full summer plumage, and a young example of the Red-throated Diver (*Colymbus septentrionalis*), purchased in January last, the exact determination of which was at first rather a matter of doubt. There are, besides, in this house good specimens of the Indian Diver (*Plotus anhinga*) and of the rare Sclater's Penguin (*Eudyptes sclateri*) (deposited by the Hon. Walter Rothschild) from the Auckland Islands. In a compartment near the Seal-pond will be found a remarkably fine example of the King Penguin (*Aptenodytes pennanti*), now in full and brilliant plumage, which has been living there since June 1897, and a specimen of the Gentoo Penguin (*Pygosceles tæniatus*) from the Falkland Islands, received in June 1898.

Dates of Jardine and Selby's 'Illustrations of Ornithology.'—In April 1894 I published a note on the dates of this book, of which that part on the "New Series" (vol. iv.) was merely tentative. Professor Newton has very kindly called my attention to a set of this "New Series," which belonged to Selby, and is now in his library, in the original wrappers, and has allowed me to make the following exact statement as to their contents:—

No. 1.	Pls. I.–VI.,	with unpaged text	to each plate.	1837.
2.	VII.–XII.,	,,	,,	1837.
3.	XIII.–XVII. (XIV. double)	,,	,,	1837.
4.	XVIII.–XXIII.	,,	,,	1838.
5.	XXIV.–XXIX.	,,	,,	1839.
6.	XXX.–XXXV.	,,	,,	1839.
7.	XXXVI.–XLI.	,,	,,	1840.
8.	XLII.–XLVII.	,,	,,	1842.
9.	XLVIII.–LIII.	,,	,,	1843.

Lists of the plates contained in each of the first eight parts are printed on the outside of the wrappers.

It is only fair to say that this note is due to the inquiries of Mr. Chas. W. Richmond, of Washington, who, in his endeavour to obtain more exact information than I was able to give, applied to Professor Newton.—DAVIES SHERBORN (*Index Animalium*).

Scientific Expedition to Alaska.—Among the names of the scientific men invited to join in the expedition to Alaska, as his guests, by Mr. Edward H. Hardman of New York, we are much pleased to notice those of Mr. D. G. Elliot of Chicago, Dr. A. K. Fisher and Dr. C. Hart Merriam of the U.S. Biological Survey, and Mr. Robert Ridgway of the U.S. National Museum. We hope that our friends will all have a "regular good time," and add much to our knowledge of the very interesting avifauna of Alaska. We learn from 'Science' that they expect to take the "inside passage" route to Lynn Canal, and then, after visiting Sitka, proceed westward along the coast to Yakutat Bay, Prince William Sound, Cook's Inlet, and Kodiak Island. Numerous places will be visited which are out of reach of ordinary travellers, and stops will be made to admit of scientific work. Steam-launches, tents, camp-outfit, packers, and so on have been bountifully provided, so that the largest amount of work may be done in the shortest time.

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XLI.—*Field-notes on Birds collected in the Philippine Islands in* 1893–6.—Part IV. By [the late] John Whitehead.

[Concluded from p. 399.]

e. Columbæ (*and remaining Orders*).

281. Osmotreron axillaris (Bp.). (Grant, Ibis, 1894, pp. 410, 521; 1895, pp. 264, 467; 1896, p. 563; 1897, p. 249.)

This Fruit-Pigeon is found in most of the Philippine Islands; it is common, and is often met with in large flocks.

Iris greenish white; bill pale blue; nostrils blood-red; feet dull greenish white.

282. Phabotreron amethystina (Bp.). (Grant, Ibis, 1897, p. 249.)

Obtained by us in Samar, where it was somewhat scarce. Frequents the thick, low growth in old clearings, but also true forest.

Iris light brown; patch of bare skin below and round the eye dull greenish white; feet coral-pink.

283. Phabotreron maculipectus B. & W. (Grant, Ibis, 1896, p. 563.)

Of this species we only obtained a pair near the base of Canloön volcano, Negros, to which island this Pigeon is probably confined. This species and *P. amethystina* are quite distinct in form from the next three mentioned, having much more powerful bills; they are also much rarer.

Iris brown; bill black; feet dark coral-pink.

284. Phabotreron leucotis (Temm.). (Grant, Ibis, 1894, pp. 410, 621; 1895, pp. 264, 467; 1896, p. 476.)

Common in the forests of Luzon from the sea-level up to 7000 feet. We took several eggs at Cape Engaño in the month of May 1895. This Pigeon was also met with in Mindoro at 5000 feet.

285. Phabotreron brevirostris Tweedd. (Grant, Ibis, 1896, p. 563; 1897, p. 249.)

Fairly common in Samar and Leite, frequenting deserted clearings more than tree-forest.

Iris dark brown; bill black, dull lake-red at base; feet coral-red.

286. Phabotreron nigrorum Sharpe. (Grant, Ibis, 1896, p. 563.)

Met with not uncommonly on the lower slopes of Canloön, Negros.

Iris and bill black; feet dull coral-pink.

287. Ptilopus occipitalis (G. R. Gray). (Grant, Ibis, 1894, p. 521; 1895, p. 116; 1896, p. 564; 1897, p. 249.)

By no means rare in old forest. Occurs in the mountains of Luzon as high as 3000 feet; it was also met with by us in Samar and Negros, but is not yet recorded from Mindoro.

Iris greenish brown; occipital skin dull green; bill yellow; nostrils vermilion; feet coral-red.

288. Ptilopus leclancheri (Bp.). (Grant, Ibis, 1895, p. 264; 1896, p. 124; 1897, p. 249.)

This Pigeon has been met with in all the larger Philippine Islands, with the exception of Mindanao.

Iris dull orange-yellow; bill bright king's yellow, with two dull red patches at the base of the lower mandible; feet muddy coral-pink.

289. Ptilopus marchei Oust. (Grant, Ibis, 1895, p. 468.)

This beautiful Pigeon, like *Pitta kochi*, was a bird that had been lost to ornithologists for over fifteen years; the rediscovery of the species was therefore of great interest. *P. marchei* inhabits exactly the same localities as *Pitta kochi*, frequenting the stunted trees near the mountain-top. We obtained five specimens, one of which was immature. It was met with at nearly 8000 feet.

Ad. Iris of two colours, a lake-red outer ring, with an inner one of yellow; bill at base brick-red, tip yellow; nostrils darker brick-red; feet bright coral-red.

Juv. Iris dull brown.

290. CARPOPHAGA CHALYBURA Bp. (Grant, Ibis, 1895, p. 264; 1896, pp. 124, 477, 564; 1897, p. 249.)

Carpophaga ænea Linn. (Grant, Ibis, 1894, p. 521.)

Common, wherever old forest exists, in all parts of the archipelago. In Central, North, and North-east Luzon it is scarce, the next species taking its place, but at Cape Engaño both species were met with in the same forest, though *C. nuchalis* was more numerous.

291. CARPOPHAGA NUCHALIS Cab. (Grant, Ibis, 1895, p. 116; 1896, p. 124.)

This species takes the place of *C. chalybura* in Luzon just to the north of the 16th meridian of longitude, where, on looking at the map, a barrier of high mountains will be found. *C. nuchalis* apparently does not cross the great central cordillera, as *C. chalybura* was the only species met with by us in Benguet and Lepanto. On my return from Isabella (where this species was common) we rode over the mountain-range which runs east and west, and on reaching the plains to the south obtained specimens of *C. chalybura*, a bird we had not met with during our stay in the more northern provinces. A Pigeon collected on Fuga Island is certainly not this species, having no maroon on the nape at all.

Iris and orbital skin dull crimson-lake; bill slate-blue, tip white; feet dull violet-lake.

292. CARPOPHAGA POLIOCEPHALA (G. R. Gray). (Grant, Ibis, 1895, p. 264; 1896, pp. 476, 564; 1897, p. 250.)

This fine Pigeon has now been recorded from all the principal Philippine Islands. It frequents the thick forests in the lowlands, and is difficult to shoot owing to the great height of the trees on which it perches.

This and the next species differ from typical *Carpophaga* in having a conspicuous, bright-coloured, fleshy ring round the eyelid, true *Carpophaga* being feathered right up to the eye. The barred tail is found in some species of true *Carpophaga*, so this is not a generic distinction.

This Pigeon is generally met with in pairs or in small parties of five, but one evening in Mindoro I saw a flock of over twenty pass the river near my camp. In the trees they are somewhat quiet and difficult to see. The note is a deep booming sound.

Iris bright vermilion, with a narrow yellow inner ring; orbital skin and bare skin round it crimson-lake; bill black, with a lake patch at base of lower mandible; feet coral-red.

293. CARPOPHAGA MINDORENSIS Whitehead. (Grant, Ibis, 1896, p. 476, pl. xi.)

This magnificent Pigeon was met with at between 4000 and 6000 feet on Monte Dulangan, the highest mountain in Mindoro. It was some time after we had been camped out at 4500 feet that we became aware of its presence. In the early mornings, and occasionally during the day, we had heard a distant booming note, which sound travelled apparently from a great distance. This booming sound would be best written "bōō-hōup," uttered several times in succession at short intervals.

On one of the few bright afternoons we were busily engaged setting rat-traps in the vicinity of the camp, when the powerful booming "bōō-hōup" was heard close by. One of the "boys" went after the unknown, and shortly returned with one of these wonderful Pigeons. After this we followed up the birds in all directions whenever they "boomed," as, fortunately, they would remain a long time in the same locality; but so thick was the bamboo and other undergrowth, so rough the ground, and so drenching wet the foliage, that our efforts met with small success, only five birds being shot in three months.

This species is more often met with singly or in pairs, but sometimes as many as four birds were seen together; they were feeding on some large purple-coloured fruits as big as a Pigeon's egg. *C. mindorensis*, like the last species, has a conspicuous fleshy ring outside the eyelid. It is probable that such a powerfully-winged bird will be met with in some of the neighbouring islands, more especially the mountains of Zamballes, in Luzon, and perhaps the mountain-island of Sibuyan. During dull misty weather, especially just after daybreak, the penetrating booming note is more often heard than on clear days.

♂. Iris bright yellow, with an outer ring of red; orbital skin lake-red, with a greyish-yellow space between the rings; bill black; feet coral-pink.

♀. Iris straw-yellow, with an outer ring of golden brown; orbital skin orange-yellow; bill olive-brown, black at tip; feet salmon-red; nails black.

294. CARPOPHAGA BICOLOR Scop.

I saw several Pigeons of this species in a cage in Albay, said to have been captured on the island of San Bernardino, between South Luzon and Samar. This species is found throughout the Philippines, though I never obtained it.

295. PTILOCOLPA CAROLA (Bp.). (Grant, Ibis, 1894, p. 521; 1895, p. 117; 1896, p. 125.)

The interesting point whether *P. griseipectus* is the male of *P. carola* or a distinct species was satisfactorily settled by us. Both birds were shot from the same trees, and the discovery of a second species of *Ptilocolpa* in Negros, with the female exactly like the female *P. carola*, puts the question beyond doubt.

P. carola is fairly common in parts of North Luzon, its abundance or scarcity depending much on the state of the fruits on which it feeds. This Pigeon has been obtained in Mindoro, and is said also to occur in Mindanao, the latter locality being perhaps open to doubt.

Mr. Grant has put my Negros specimens down in his list (Ibis, 1896, p. 564) as belonging to this species. The Negros birds are, however, quite distinct from *P. carola* of Luzon and Mindoro.

This and the following species should, I think, be separated from the genus *Carpophaga*, not only on account of the peculiar scooping-out of the inner web of the wing-feathers, but also because in true *Carpophaga* the sexes resemble each other, which in *Ptilocolpa* they do not.

Iris pale whitish yellow; orbital skin greenish blue; nostrils scarlet-pink; bill tipped with white; feet coral-pink.

296. Ptilocolpa nigrorum Whitehead. (Ibis, 1897, p. 439.)

Ptilocolpa carola Grant (nec Bonap.), Ibis, 1896, p. 564.

When camped just below the bare cone of Canloön (the great active volcano in Central Negros), for several mornings just after sunrise a peculiar rushing sound, like the distant whiz of rockets, passed over our camp. Knowing such a sound could be caused only by the swift passage of a flock of birds, one morning I started just before daylight, and in less than twenty minutes reached the open mountain-side above tree-limit. Shortly a flock of Pigeons came over the mountain some 1000 feet above me, and dived down the mountain-side at a terrific pace. I had no doubt at the time that they were a flock of *P. carola*. On shooting a male some mornings later, the black patch on the crop-region struck me as peculiar, but having no specimens with which to compare it, I doubted the probability of meeting with a new species of the genus in Negros, and thought no more about it until after my return to England, when, on comparing the Negros and Luzon birds, the difference was obvious.

The curious habit of these Pigeons in passing over the mountain daily at a fixed time I could not account for, except that perhaps they roosted at a great elevation, or that they worked round the base of the volcano during the day, crossing the mountain to make the journey shorter. The presence of a nesting pair of Peregrines (*Falco ernesti*) with a growing family in the neighbouring rocks would account for the speed with which the journey was performed.

Colouring of soft parts as in *P. carola.*

297. Columba griseigularis (Walden & Layard). (Grant, Ibis, 1895, p. 469; 1896, p. 565.)

This species is by no means a common bird, but seems to inhabit the high mountains, where we met with it in Lepanto at 7500 feet, and in Negros at over 6000. It has been met with in Mindanao, and in Pulo Tega, off the west coast of Borneo.

Iris an orange-yellow ring, with an inner one of lake; orbital skin, nostril, and feet pale blood-pink; nails nearly white; top of bill dull white.

298. Macropygia tenuirostris G. R. Gray. (Grant, Ibis, 1894, p. 521; 1895, pp. 265, 469; 1896, p. 477; 1897, p. 250.)

Common among the mountains of North Luzon, and found nesting on the summit of Monte Data, where the large tracts of dead bracken-ferns afford it good protection. I saw a young one nearly ready to fly on 28th January on this mountain. This Dove is also plentiful in the lowland forests, and is distributed throughout the archipelago.

299. Turtur dussumieri (Temm.). (Grant, Ibis, 1895, pp. 117, 265, 471; 1897, p. 250.)

Common, and distributed throughout the Philippines. Generally obtained in open places near native villages.

300. Turtur humilis (Temm.). (Grant, Ibis, 1894, p. 411; 1895, p. 471.)

Fairly common in North Luzon, frequenting open places, like the preceding species, but known from only one other island, Mindoro. This species has a wide range over South-eastern Asia, from India to Formosa.

301. Turtur striatus (Linn.).

Geopelia striata (Linn.). (Grant, Ibis, 1894, p. 411; 1897, p. 471.)

Fairly common in North Luzon, frequenting like localities with the previous two species. This small Dove is so widely distributed over the Malay Archipelago that it is somewhat curious it should have been recorded only from Samar and Luzon; but several species have been introduced by man into the Philippines (viz. *Acridotheres cristatellus* and *Passer montanus*), and this species may be one of them, as it is often kept as a cage-bird throughout the Malay Islands.

302. CHALCOPHAPS INDICA (Linn.). (Grant, Ibis, 1895, pp. 265, 471; 1896, pp. 125, 477, 565.)

This has been recorded from all the larger Philippine Islands. It frequents thick forest, and is more active towards the evening, when it may be seen passing low over the ground on the wing from one patch of forest to another. I believe I saw a different species of *Chalcophaps* in North Luzon, but unfortunately I did not obtain it.

303. PHLOGŒNAS LUZONICA (Scop.). (Grant, Ibis, 1896, p. 125.)

This beautiful Ground-Pigeon is confined to the island of Luzon, where in well-wooded districts it is not rare. It frequents the ground in thick forest, and is somewhat difficult to obtain with the gun. In Manila it may often be seen in the aviaries of the Spaniards; but the birds lose their lovely pink shade on the breast when caged, becoming almost white.

Iris bluish grey; bill brownish black; legs coral-pink.

304. PHLOGŒNAS CRINIGERA (Reichenb.). (Grant, Ibis, 1897, p. 250.)

Only one specimen of this Pigeon was met with by us in the mountains of North Leite, where it had not previously been obtained.

Iris dull violet-blue; bill dull grey, whitish at the tip; feet pale pink, with darker lake scales.

305. EXCALFACTORIA LINEATA (Scop.). (Grant, Ibis, 1895, pp. 265, 471.)

Met with in Luzon, ranging up to 4000 feet in Lepanto. Though this species has not yet been recorded from Samar, I shot a male in that island, which was unfortunately only winged and escaped.

306. Gallus gallus (Linn.). (Grant, Ibis, 1894, p. 521; 1895, p. 471.)

Widely distributed throughout the Philippines from Fuga Island to Basilan. This jungle-fowl is also found at great elevations; we met with it at 7000 feet in Negros and North Luzon, and at a slightly lower altitude in Mindoro.

Iris red; bill horny brown; legs greyish black.

307. Megapodius cumingi Dillwyn. (Grant, Ibis, 1896, p. 125.)

Common on the coasts of most of the Philippine Islands.

Iris and bill dark brown; bare skin on face pale vermilion; legs black, soles of feet yellow.

308. Turnix ocellata (Scop.). (Grant, Ibis, 1894, p. 521; 1895, p. 265.)

This Quail is apparently confined to Luzon, where it is not uncommon. Examples of all three species of *Turnix* are brought into Manila by the natives and sold in the markets for food. They are captured round about Manila during and after the rice-harvest, the Tagalo name for them being "Pogo." I shot one, and saw several pairs of this *Turnix* at an altitude of over 6000 feet in Benguet.

309. Turnix fasciata (Temm.). (Grant, Ibis 1895, pp. 265, 471; 1896, p. 565.)

Fairly common in parts of Luzon. This species is also distributed through most of the large islands, but has not yet been met with in the Samar-Mindanao group.

Iris light straw-yellow; upper mandible dark brown; lower mandible and legs straw-yellow.

310. Turnix whiteheadi Grant, Game-B. ii. p. 276 (1897).

An example of this minute *Turnix* was purchased alive in the Manila market. The bird has doubtless been served up to the Spaniards on toast for the last 300 years. It is curious that it should have remained so long unnamed.

certainly met with it on the grassy mountain-slopes in Benguet at 5000 feet, but although I fired several shots with my collecting-gun, I failed to secure one, as the bird rises at one's feet, flies very fast for a short distance only, when it drops and runs. I saw a stuffed specimen in Manila, which I was assured came from the island of Bohol.

Iris pale straw-yellow; bill dark brown at tip, pinkish at base; legs pale pinkish yellow.

311. ESACUS MAGNIROSTRIS Geoffr. St.-Hil. (Grant, Ibis, 1896, p. 127.)

A pair of the Great Thick-kneed Plover frequented a small island off the coast of Cape Engaño, and, judging by their ways, I am sure they had young hidden somewhere in the scrub which covered part of the island.

312. CHARADRIUS FULVUS Gmel. (Grant, Ibis, 1895, p. 266.)

The Asiatic Golden Plover is a common winter migrant to the Philippines and the Malay Islands. It arrives in the first days of September (still in its breeding-plumage), and remains until nearly the middle of April. I saw large flocks on the north coast of Luzon on the 9th of that month.

313. ÆGIALITIS PERONI (S. Müll.). (Grant, Ibis, 1896, p. 126.)

This small Sand-Plover is a resident species in the Philippines, and also in Borneo. It frequents the sea-coasts in pairs or in small parties of five (the adults and three young). At Cape Engaño I was fortunate in finding a clutch of three eggs laid on the sand a few yards above high-water mark. The egg is well figured in this Journal (1898, pl. vi. fig. 8). On the same day I found young nearly full-grown.

314. ÆGIALITIS DUBIUS (Scop.). (Grant, Ibis, 1895, pp. 266, 472.)

This Sand-Plover is also resident in the Philippines, frequenting the shingle-banks in the rivers of North Luzon. I failed to find its young or eggs, though I have no doubt that several pairs met with had their young in my vicinity.

315. ÆGIALITIS MONGOLICA (Pall.). (Grant, Ibis, 1896, p. 126.)

A winter visitor to the Philippines; my specimens were obtained in Manila Bay.

316. ÆGIALITIS GEOFFROYI (Wagl.). (Grant, Ibis, 1896, p. 126.)

A winter migrant to the Philippines. Shot on the 20th May at the north point of Luzon.

317. GLAREOLA ORIENTALIS Leach.

I saw numbers of a Pratincole, probably of this species, flying over a sandy plain one evening towards the end of June, and have no doubt they were nesting in the locality.

318. STREPSILAS INTERPRES (Linn.). (Grant, Ibis, 1896, p. 126.)

The Turnstone is a common winter migrant to the Philippines, remaining until past the middle of May.

319. TRINGA RUFICOLLIS Pall. (Grant, Ibis, 1896, p. 127.)

Common on the sea-coast in sheltered bays, and at times found far inland on the rice-fields during the winter months.

320. TRINGA SUBARQUATA (Güldenstädt). (Grant, Ibis, 1896, p. 127.)

The Curlew-Sandpiper was obtained in full breeding-plumage at Cape Engaño on the 18th of May.

321. LIMOSA LAPPONICA (Linn.). (Sharpe, B. M. C. xxiv. p. 373.)

The Bar-tailed Godwit was shot in Samar on 30th of August, but burnt with the collection.

322. NUMENIUS PHÆOPUS (Linn.). (Sharpe, B. M. C. xxiv. p. 355.)

A Whimbrel common on the coast at Cape Engaño in the middle of May was probably of this species.

323. NUMENIUS ARQUATA (Linn.). (Sharpe, B. M. C. xxiv. p. 341.)

A Curlew was obtained in Samar on 29th of August, but burnt on board the ' Wieland.'

324. Gallinago gallinago Linn. (Grant, Ibis, 1894, p. 522.)

The Common Snipe is doubtless plentiful at times in the Philippines. The only specimen obtained by us was shot in Benguet at 4000 feet.

325. Gallinago megala Swinh. (Grant, Ibis, 1894, p. 522.)

Swinhoe's Snipe is the common Snipe of the Philippines. It begins to arrive in the islands about the middle of August, and in September the migration is in full swing, when thousands of this Snipe afford excellent sport on all the marshy country throughout the archipelago. It was common at 4000 feet on a swamp in Benguet, and I flushed a bird as late as the 20th of May at Cape Engaño.

326. Totanus ochropus (Linn.). (Sharpe, B. M. C. xxiv. p. 437.)

The Green Sandpiper was not uncommon at an altitude of 4000 feet in Benguet. I also noticed the species on a stony stream in Negros.

327. Totanus glareola (Linn.). (Grant, Ibis, 1895, p. 471.)

The Wood-Sandpiper is a common winter migrant to the Philippines.

328. Totanus brevipes Vieill. (Grant, Ibis, 1896, p. 126.)

Was obtained in Manila Bay.

329. Rhynchæa bengalensis (Linn.). (Grant, Ibis, 1895, p. 266.)

The Painted Snipe is resident in the Philippines. I found a pair frequenting a small swamp in Samar in June, but was unable to find their nest.

Iris and bill brown; legs light olive-green.

330. Tringoides hypoleucus (Linn.). (Grant, Ibis, 1895, p. 266.)

The Common Sandpiper is met with on most of the rivers of the Philippines during all months of the year, but I have never seen any of those signs of anxiety which betray nesting-birds.

331. Calidris arenaria (Linn.).

I purchased a Sanderling collected for me in Manila, which was unfortunately destroyed with the first Samar collection.

332. Hypotænidia torquata (Linn.). (Grant, Ibis, 1895, pp. 265, 471.)

This handsome Rail is not uncommon in the Philippines, and was obtained by us in Luzon and Catanduanes; a native also brought me one in Samar. It has been obtained in most of the Philippine Islands, to which archipelago its distribution is apparently confined. Tagalo name, "Tickling."

333. Hypotænidia philippinensis (Linn.). (Grant, Ibis, 1895, p. 471.)

This species, unlike the preceding, has hitherto been recorded only from Luzon, in which island we obtained a specimen at the base of Monte Data, at an altitude of over 5000 feet. It has an extended range, being met with as far south as New Zealand.

334. Limnobænus fuscus (Linn.). (Grant, Ibis, 1895, p. 471.)

This small Rail was obtained at the base of Monte Data at an altitude of 5000 feet.

Iris vermilion; orbital skin vermilion; bill black; legs dull coral-pink, back of legs dull greyish black.

335. Gallinula chloropus (Linn.). (Grant, Ibis, 1894, p. 521.)

The Moorhen is common in the Philippines. On a small lake in Benguet (at 4000 feet) numbers of this species might be seen any day. We also met with it in Samar, where a nest and eggs were found.

336. Amaurornis olivacea (Meyen). (Grant, Ibis, 1896, p. 125.)

We found this species, which is confined to the Philippines, somewhat rare; it was met with only in Luzon and Samar.

Iris brick-red; bill pea-green; legs and thighs king's yellow; tarsus and feet yellowish brown.

337. Gallicrex cinerea (Gmel.). (Grant, Ibis, 1895, p. 265.)

This large Crake is generally met with in paddi-fields and swamps; it is not uncommon in the Philippines. My specimen was obtained in Catanduanes, and it was also seen by us in Samar.

Winter: Iris brown; bill yellow, brownish pink at the base; legs olive-brown.

Grus monachus Temm. ?

A large slate-grey Crane, which is probably of this species, visits the Philippines during the winter months. Though I myself never saw the bird alive, it is not uncommonly met with stuffed in the houses of the Spaniards, a priest that I knew having two, shot by himself near Monte Arayat.

A German friend of mine in North Luzon told me that one winter they were visited by a flock of Wild Geese, one of which he shot, and also that he once obtained a Spoonbill.

338. Phoyx manillensis (Meyen). (Grant, Ibis, 1895, p. 266.)

Common in the paddi-fields, and of wide distribution in the Philippines. Observed by us in Luzon, Samar, and Negros.

339. Demiegretta sacra (Gmel.). (Grant, Ibis, 1896, p. 127.)

A specimen shot on the sea-coast at Cape Engaño.

Iris straw-yellow; bill and skin on face dusky black; legs greenish yellow; soles of feet bright yellow.

340. Bubulcus coromandus (Bodd.).

Common among the paddi-fields. A specimen obtained by us in Catanduanes.

341. Nycticorax manillensis Vigors. (Grant, Ibis, 1895, pp. 117, 266; 1896, p. 127.)

The Philippine Night-Heron is not a rare bird in the forests of the archipelago, where it is generally met with singly. We discovered a small heronry in Albay in the beginning of August, and although the birds were perched on and about their nests, we were unable to ascertain whether they had eggs or not, owing to the great height of the trees.

Ad. Iris yellow; bill black; bare skin on face emerald-green and blue; feet yellow; joint of tarsus light green; in the young the tarsus is brown.

342. Nycticorax griseus (Linn.).

This species also occurs in the Philippines; we purchased a specimen in Manila.

343. Gorsachius melanolophus (Raffl.). (Grant, Ibis, 1897, p. 250.)

A specimen of this Heron was obtained in the forests of Samar.

Juv. Iris straw-yellow; bare skin on face dull green, bluish about the eye; bill black, lower mandible dull white; feet greenish olive-brown, back of legs pale yellow.

344. Butorides javanica (Horsf.). (Grant, Ibis, 1894, p. 522; 1895, p. 267.)

The Green Pond-Heron is common in the Philippines, and was obtained in Benguet at an altitude of 4000 feet; also seen in Samar.

345. Ardetta cinnamomea (Gmel.). (Grant, Ibis, 1894, p. 522; 1895, p. 266; 1896, p. 127.)

This is a common species met with in the paddi-fields in numbers in Luzon; also seen by us in Samar.

346. Ardetta sinensis.

A specimen was obtained near Manila.

347. Melanopelargus episcopus (Bodd.). (Grant, Ibis, 1895, p. 267.)

This handsome Adjutant is not rare in the Philippines. We obtained a specimen in Albay (South Luzon), and observed it at Cape Engaño, also in Negros and Samar. It is generally met with singly in swampy districts, but may occasionally be noticed perched on the topmost branch of some forest-tree.

348. **Hydrochelidon hybrida** (Pall.). (Grant, Ibis, 1896, p. 127.)

This Tern is not uncommon on the coasts of the Philippine Islands. I observed it in North Luzon and off the coast of Negros. My specimen was obtained in Manila Bay.

349. **Sterna sinensis** Gmel.

Obtained in Manila, where it may be seen in hundreds during the winter.

350. **Larus ridibundus** Linn.

The Black-headed Gull is very common during the winter months off the mouth of the Pasig, which river flows into Manila Bay. I also saw a large Black-backed Gull on the sands near Aparri (North Luzon), which I was unable to secure.

351. **Podicipes philippensis** (Bonnat.).

Tachybaptes philippinensis (Bonnat.). (Grant, Ibis, 1895, p. 472.)

The Philippine Dabchick was obtained at the base of Monte Data.

352. **Phalacrocorax** sp. inc.

I saw Cormorants several times on the Abra river in November, and, if I had known that the genus had not been recorded from the Philippines, I should have taken more trouble to secure a specimen.

353. **Plotus melanogaster** (Forster).

Though we did not preserve a specimen of the Darter, it was observed on many occasions in Luzon and also in Mindoro.

354. **Fregata ariel** (Gould).

Fregata minor (Gmel.). (Grant, Ibis, 1896, p. 128.)

Not uncommon in the Philippines. We obtained a specimen at Cape Engaño.

Iris black; bill and bare skin on face pale Cambridge blue; pouch pale greyish blue; feet white.

355. Anas luzonica Fraser. (Grant, Ibis, 1895, pp. 117, 267.)

This Duck was in large flocks on the sand-banks of the Rio Grande (in North Luzon) during the month of April, when over a hundred might be seen together. In Benguet and Lepanto it was also common, frequenting the mountain-lakes in small flocks. It is, as a rule, quite tame, and falls an easy victim to the pot-hunter, two of my servants shooting over twenty in a few hours on one of the Lepanto lakes. In Samar it was also abundant.

Iris hazel; bill lead-blue; feet blackish brown.

356. Querquedula crecca (Linn.).

This Teal was not uncommon at 5000 feet in the mountains of Benguet, where it frequented the small lakes and streams. I shot several for the pot.

357. Fuligula marila (Linn.)?

I saw several white-and-black-coloured Ducks, which I took to be Scaups, a short distance up the Rio Grande about the middle of April.

358. Dafila acuta (Linn.).

A stuffed pair of the Pin-tailed Duck seen in a Manila bird-stuffer's shop.

359. Dendrocygna arcuata Cuv. (Grant, Ibis, 1895, p. 267.)

This species is fairly common in the Philippines, especially in marshy districts. In Samar, on a large swamp, this Duck was very common, sitting about in the long grass in flocks of ten to twenty or more; it was also very tame, rising time after time within 30 yards. The wings are large for a Duck, and used more like those of a Heron, but quicker.

We also obtained examples of this species in Catanduanes.

XLII.—*On the Breeding of the Purple Gallinule in Captivity.*

By Joseph I. S. Whitaker.

The following account of the breeding in captivity of the Purple Gallinule (*Porphyrio cæruleus* Vandelli) may be of interest to some of the readers of 'The Ibis,' being, so far as I am aware, the first recorded instance of such an occurrence; notwithstanding that the species is easily domesticated, and in fact may be occasionally seen in a Sicilian poultry-yard, living in perfect harmony with the common barn-door fowl.

For some years past I have been in the habit of keeping several of these birds in an enclosure in my garden near Palermo, but until last year no attempt at nesting had taken place among them; and I was beginning to give up all hope of the birds breeding, when one day in April last I discovered a nest with three eggs in it. After a fortnight's incubation, however, for some reason or other unknown to me, this nest was deserted, and I found but one of the eggs remaining, the other two having probably been destroyed by the birds themselves.

A second attempt at nesting occurred in the early summer of last year, during my absence from Sicily, and this time with a satisfactory result, three young birds being hatched and successfully brought up. According to my gardener, who had the charge of these birds, incubation in this instance commenced about the beginning of July, and lasted between three and four weeks. The young birds, which are now about eight months old, are scarcely distinguishable from the adults.

A third case of nidification has but recently occurred in my little colony of Purple Gallinules, and, having taken place in mid-winter, is for that reason all the more remarkable. As I have myself been able personally to observe and follow the different phases of this case from beginning to end, I think it worth while to describe them in detail, hoping that the interest attaching to the facts may be sufficient justification for my prolixity. Before proceeding further, however, I may mention that the enclosure in which the

Porphyrios are kept covers an area of about 40 square yards, and is surrounded and covered in with wire-netting. It adjoins a little lake, and has clumps of bamboo (*Bambusa mitis*) growing in it, which afford ample shade and shelter, and aid in rendering the environment somewhat similar to that of the birds' natural habitat.

Returning to my starting-point, I may say that I first noticed one of the birds sitting on a nest about the 25th of December last, and a day or two afterwards, availing myself of a moment when the nest was uncovered, I was able to peep into it and saw that it contained two eggs, a number which was increased to three on the following day. Three eggs are undoubtedly the full complement of this species. Notwithstanding the inclemency of the weather, incubation proceeded regularly and uninterruptedly until the 18th January, when the three eggs were hatched, the chicks beginning to run about a little the same day, although the old hen endeavoured to keep them under her wings as much as possible, instinctively fearing, no doubt, that the cold might be too severe for them. The old male bird also was most assiduous in his care of the brood, and both parents would rush at any one approaching the enclosure, clamorously protesting at the intrusion. I would here say that I thought at first that the male bird took part in the incubation of the eggs, but subsequent observation leads me to think that he does not do so as a rule, although he may occasionally go on to the nest; in fact, I have once or twice seen both the old birds on the nest at the same time! After the first day or two the young chicks began to move about more, and also to peck a little at the food supplied to them, although, as a rule, they seemed to be fed by the parent birds, and this continued until quite recently. Excessively shy at first, the little things would run off and hide themselves immediately anyone appeared in sight, thus demonstrating the natural and hereditary timidity of the species. The only sound I have heard these chicks utter has been an occasional chirp, not unlike that of a young Sparrow.

The plumage of the chick in its first stage consists entirely of a rich velvet-black down, with a few filamentary feathers (*filoplumæ*) on the head and wings, while the bill and frontal shield are white, with a little red round the nostrils and base of the bill. The iris is of a dark slate-colour. The legs and feet are of a rosy flesh-colour, and not white, as erroneously stated by some authors, who perhaps may only have had the opportunity of observing unborn chicks, taken from the egg, the legs of these being in fact white in that stage.

The *pollex,* or first digit of the wing, in the young of this species is highly developed, and bears a sharp and well-pronounced claw at its extremity. After a month or so the plumage of the young birds, although still in down, assumes a more dingy or smoky-black colour in place of the rich velvet-black, and some whitish down appears on the lower parts and under tail-coverts; the bill becomes black instead of white, and the legs and feet exchange their rosy flesh-colour for a leaden-grey brown; the iris at this period is olive-brown. Up to the time of my writing, the plumage of these young birds, which are now about two months old, shows no blue colour, and this will probably not appear until the contour-feathers are assumed, when the bill and frontal shield, as well as the legs and feet, will, no doubt, also become red.

The eggs of the Purple Gallinule, of which I have a good series from Vittoria, on the south coast of Sicily, are of a warm buff or yellowish stone ground-colour, with shell-spots and blotches of greyish violet and surface-markings of reddish brown. They are generally rather elongated in shape, and measure from 55 to 60 mm. in length by 35 to 40 mm. in width. The nest of this bird in its wild state, I am told, is a rude structure, somewhat resembling that of the Common Moorhen, and is generally to be found in the thickest part of some dense growth of flags or other aquatic plants. The nests of the birds in my garden were all made of the dry leaves of the bamboo, loosely put together, and placed at the foot of a clump of these plants. In its natural state the Purple Gallinule commences breeding about the end of March, and nesting is continued until June, during which month I have even had fresh eggs sent to me.

The species is tolerably plentiful in Sicily wherever there are any marshes or lakes of a fair size, such as at the Pantano di Catania, the Biviere di Lentini, the river A'napo near Syracuse, and at Vittoria on the south coast. I am told there are also a few of these birds to be found in the Mazzara marshes on the west coast of Sicily.

Benoit, in his book on the birds of Sicily, gives a good description of some of the habits of this species, and Doderlein, in 'Avifauna del Modenese e della Sicilia,' reproduces this description, and adds some further interesting notes. Neither author, however, seems to have noticed the difference between the voices of the male and female birds. That of the male is low and sonorous, terminating with some hoarse trumpet-like notes, while that of the female is shrill and ends with a series of notes which may be very fairly rendered by the word "crick" several times repeated.

With regard to the powers of natation in this species (which Benoit seems to have doubted), I can, from personal observation, confidently affirm that, although as a rule it shows a preference for dry land, it can and, when so required, does swim with the greatest ease and facility. I have even seen chicks only a few days old swimming. The Italian name of the Purple Gallinule is "Pollo sultano," and the Sicilian name "Gaddo fagiano" or "Gaddu fascianu."

P.S.—Since this was written, now more than two months ago, some changes have taken place in the plumage and general characters of the young Purple Gallinules born in January.

The first blue contour-feathers appeared soon after the completion of the second month, and about the end of the third month the colour of the soft parts began to turn red.

At the present time these young birds, which are now about four months old, have the plumage of their upper parts entirely blue, while that of their lower parts is also blue to a great extent, although a few greyish down-feathers still show. The soft parts are now all red, but of rather a duller shade than that of the adult birds. The colour of the iris is now also red.

XLIII.—*A List of Birds collected on the Island of New Providence, Bahamas.* By J. Lewis Bonhote.

The following is a list of birds collected or observed on the island of New Providence, where the writer stayed for about a year. The island contains a few scattered settlements besides Nassau, the capital of the Bahamas, a town of about 14,000 inhabitants; but, except for some sisal plantations on the north side and small plots round the settlements, the soil is uncultivated. On the south side are large tracts of wood known as pine-barrens, where there is hardly any vegetation except pine-trees, palmetto, and bracken, which practically grow on the bare rock; the remainder of the island, where there is a little more soil, being covered with thick dense bush some 20 feet high. The rock is coral-limestone, with a very uneven surface, full of holes, some of which are very large and deep, containing fresh water, which rises and falls with the tide, and with very sharp angular edges; the only soil found is that which has accumulated in these pockets. Short heavy showers are frequent during the greater part of the year, but May and September are the months when most rain falls. As might be expected in a locality so near the American coast, the bird-fauna, compared with that of many other parts of the world, is well known, and it is not to be anticipated that many more new species will be found; nevertheless little or nothing is known of the habits, eggs, &c. of several species peculiar to the Bahamas, and good work may be done in extending the range of many well-known American species. The present collection contains three or four species not hitherto recorded from New Providence, and one species, *Pyranga æstiva,* hitherto only doubtfully recorded from Cuba, so far as the West Indies are concerned. Species identified, but of which no specimens were procured, are placed in brackets.

1. Mimocichla plumbea (Linn.).

Mimocichla plumbea Cory, Birds Bahamas, p. 45 (1880); id. Auk, 1891, p. 294; Ridgw. Auk, 1891, p. 335; Cory, Cat. W. Ind. Birds, p. 122 (1892).

♂ ad. Near Nassau, 20th April, 1898.

Fairly common in the thick bush, but seldom seen, owing to its skulking habits. On every occasion on which I saw it I found it remarkably tame, taking no notice of me, although only a few feet distant. The song, which bears a family resemblance to that of our Common Thrush, may be frequently heard in the morning and evening.

2. Mimus polyglottus (Linn.).

Mimus polyglottus Bonhote, Bull. B. O. C. no. lxiv. p. liv.

♀ ad. Nassau, 30th September, 1898.

The only specimen of this species met with. It differs slightly from typical specimens in having the outer tail-feathers dark brown nearly to their tip instead of being white; there are also various other minor differences, but the collection in the British Museum shows so many variations that it cannot be considered a new form.

3. Galeoscoptes carolinensis (Linn.).

Mimus carolinensis (Linn.); Cory, B. Bahamas, p. 51.

Galeoscoptes carolinensis (Linn.); Cory, Cat. W. Ind. B. p. 121.

♂ ad. Nassau, 27th March, 1898.
♀ ad. „ 22nd November, 1898.

A fairly abundant winter visitor, inhabiting the thick bush, where it is more often heard than seen.

4. Mniotilta varia (Linn.).

Mniotilta varia (Linn.); Cory, B. Bahamas, p. 54; id. Auk, 1891, p. 294; Ridgw. Auk, 1891, p. 235; Cory, Cat. W. Ind. B. p. 117.

Ad. Nassau, April 15th, 1898.
♂ ♂ ad. „ 12th October and 16th November, 1898.

A common winter visitor to the gardens in the town, appearing in September and leaving in April.

5. Protonotaria citrea (Bodd.).

Protonotaria citrea (Bodd.); Cory, Cat. W. Ind. B. p. 117.

One specimen only. ♂ ad. Nassau, 29th August, 1898.

This species, previously recorded only from Cuba, is probably an occasional wanderer to the Bahamas.

6. Campsothlypis americana (Linn.).

Parula americana (Linn.); Cory, B. Bahamas, p. 55.

Campsothlypis americana (Linn.); Ridgw. Auk, 1891, p. 335; Cory, Cat. W. Ind. B. p. 117.

♂ ♂ ad. Nassau, 29th April and 21st October, 1898.
♀ ♀ ♀ ad. „ 29th & 30th April and 25th November, 1898.

Met with only on passage.

7. Dendrœca cærulescens (Linn.).

Dendrœca cærulescens (Linn.); Cory, B. Bahamas, p. 58; Ridgw. Auk, 1891, p. 335; Cory, Cat. W. Ind. B. p. 118.

♂ ♂ ♂ ad. Nassau, 28th April and 25th November, 1898.
♀ ad. „ 9th May, 1898.

Occurs regularly on both migrations.

8. Dendrœca striata (Forst.).

Dendrœca striata (Forst.); Cory, B. Bahamas, p. 61; Ridgw. Auk, 1891, p. 335; Cory, Cat. W. Ind. B. p. 118.

♂ ♂ ♂ ad. Nassau, 28th April, 13th May, and 19th October, 1898.
♀ ad. Nassau, 28th April, 1898.
2 specimens imm. Nassau, 12th & 14th October, 1898.

Met with only on passage, like the two preceding species.

9. Dendrœca tigrina (Gm.).

Dendrœca tigrina (Gm.); Cory, B. Bahamas, p. 62; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 117.

♂ ♂ ♂ ad. Nassau, 21st & 28th April and 26th November, 1898.

This species visits the Bahamas in any numbers only on passage, but single specimens are occasionally met with throughout the winter.

10. Dendrœca discolor (Vieill.).

Dendrœca discolor (Vieill.); Cory, B. Bahamas, p. 63; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 118.

♂ ♂ ♂. Nassau, 8th April and 19th August, 1898.
♀. „ 30th August, 1898.

Mr. Cory describes this bird as resident, but I did not observe it between the months of April and October, although it is the most abundant of the genus during the whole winter. On and after August 18th I never failed to meet with it, both on the pine-barrens and round the houses in the town.

11. DENDRŒCA DOMINICA (Linn.).

Dendrœca dominica (Linn.); Cory, B. Bahamas, p. 65; Ridgw. Auk, 1891, p. 335; Cory, Cat. W. Ind. B. p. 118.

♂ ♂ ♂ ad. Nassau, 23rd & 27th August and 19th October, 1898.
♀ ad. „ 23rd August, 1898.

Arrives in August, and is abundant throughout the winter in the pine-barren.

12. DENDRŒCA PALMARUM (Gm.).

Dendrœca palmarum (Gm.); Cory, B. Bahamas, p. 68; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 118.

♂ ♂ ♂ ♂. Nassau, 16th March, 8th April, 12th October, and 9th November, 1898.
♀ ♀. Nassau, 21st and 30th April, 1898.
2 specimens imm. Nassau, 1st & 10th October, 1898.

A winter visitor, especially abundant in the gardens and yards of the town. It lives chiefly on the ground, seldom perching on trees unless alarmed.

13. DENDRŒCA VIGORSI (Aud.).

Dendrœca pinus (Wils.) (nec Lath. 1790); Cory, B. Bahamas, p. 69.

Dendrœca vigorsii (Aud.); Ridgw. Auk, 1891, p. 335; Cory, Cat. W. Ind. B. p. 118.

One specimen. Nassau, 17th March, 1898.

14. SEIURUS AUROCAPILLUS (Linn.).

Seiurus aurocapillus (Linn.); Cory, B. Bahamas, p. 70; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 119.

♂ ♂ ad. Nassau, 15th April, 1898.
♀ ad. „ 25th April, 1898.

A winter visitor, found only in the thickest bush, but fairly numerous.

15. SEIURUS NOVEBORACENSIS (Gm.).

Seiurus noveboracensis (Gm.); Cory, B. Bahamas, p. 70; id. Auk, 1891, p. 294; id. Cat. W. Ind. B. p. 119.

♂ ad. Nassau, 11th April, 1898.

2 specimens ad. Nassau, 12th & 15th April, 1898.

A winter visitor, more often seen than the last-named species, inhabiting open spaces in the thick bush, especially near water.

16. OPORORNIS AGILIS (Wils.).

Oporornis agilis (Wils.); Cory, Cat. W. Ind. B. p. 119.

♂ ad. Nassau, 12th October, 1898.

1 specimen. Nassau, 14th October, 1898.

Examples of this species, which is recorded from this locality for the first time, arrived in considerable numbers on the night of the 12th October, several individuals flying into the rooms; but they remained only four or five days.

17. GEOTHLYPIS TRICHAS (Linn.).

Geothlypis trichas (Linn.); Cory, B. Bahamas, p. 72; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 119.

♂ ♂ ad. Nassau, 19th October and 6th November, 1898.

A very common and abundant winter visitor, frequenting low bushy scrub, in which it always remains well concealed; its presence may, however, often be detected by its loud and monotonous note, uttered with great frequency.

18. GEOTHLYPIS ROSTRATUS Bryant.

Geothlypis rostratus Bryant; Cory, B. Bahamas, p. 73; Ridgw. Auk, 1891, p. 335; Cory, Cat. W. Ind. B. p. 119.

♂ ad. Nassau, 10th September, 1898.

I was lucky enough to meet with one example of this species, which is well marked and quite distinct from the foregoing. The chief differences, apart from its larger size, are the greater amount of grey on the forehead, and a much brighter green on the back, while the yellow of the underparts is equally bright throughout, including vent and under tail-coverts. In habits, judging from this single example, it appears to be as skulking as *G. trichas*, but it was procured in the pine-barren, a place where I never found the common species.

19. Setophaga ruticilla (Linn.).

Setophaga ruticilla (Linn.); Cory, B. Bahamas, p. 75; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 120.

♂ ad. Nassau, 28th April, 1898.
♀ ad. „ 29th April, 1898.
Imm. „ 30th September, 1898.

Fairly common in gardens on passage.

20. Cœreba bahamensis (Reich.).

Certhiola bahamensis, Reich.; Cory, B. Bahamas, p. 76.

Cœreba bahamensis (Reich.); Cory, Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 116.

♂ ♂ ♂ ad. Nassau, 10th March, 15th & 20th April, 1898.
2 specimens imm. Nassau, 26th August, 1898.

A very abundant resident, frequenting the neighbourhood of the town and also the thick bush. It has a peculiar habit of making a hole at the base of the petals of the hibiscus, but whether for the purpose of obtaining honey or insects, I could never make out.

21. Callichelidon cyaneoviridis (Bryant).

Hirundo cyaneoviridis (Bryant); Cory, B. Bahamas, p. 79.

Callichelidon cyaneoviridis (Bryant); Cory, Auk, 1891, p. 294; id. Cat. W. Ind. B. p. 115.

♂ ad. Nassau, 23rd April, 1898.
Imm. „ 17th August, 1898.

I met with this bird sparingly in every month from April to November, but it was seldom in the same spot for two consecutive days.

22. Vireo calidris (Linn.).

♂ ♂ ♂ ♂ ad. Nassau, 21st & 27th April and 27th August, 1898.
♀ ad. „ 31st August, 1898.

One of the commonest of the summer migrants. My specimens are true *V. calidris*, and other specimens from the Bahamas in the British Museum are also *V. calidris*. In *V. barbatulus* the colour of the crown is sharply defined from that of the back, which part is much brighter than in the true *V. calidris*. In *V. calidris*, however, the difference in colour between the back and the crown is distinguishable. Mr. Cory's description (B. Bahamas, p. 82) might apply to either species, although I am inclined to think he meant it for the true *V. barbatulus*.

23. VIREO OLIVACEUS (Linn.); Cory, Cat. W. Ind. B. p. 116.

♂ ♀ ad. Nassau, 21st April, 1889.

May be readily distinguished from the former species, which it closely resembles, by the absence of the maxillary line.

24. PYRRHULAGRA VIOLACEA (Linn.).

Loxigilla violacea (Linn.); Cory, B. Bahamas, p. 85; id. Auk, 1891, p. 294.

Pyrrhulagra violacea (Linn.); Ridgw. Auk, 1891, p. 335; Cory, Cat. W. Ind. B. p. 112.

♂ ♂ ad. Nassau, 20th & 29th April, 1898.
♀ „ 25th April, 1898.

A very common resident in the thick bush.

25. EUETHEIA BICOLOR (Linn.).

Phonepara bicolor (Linn.); Cory, B. Bahamas, p. 91.

Euetheia bicolor (Linn.); Cory, Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 113.

♂ ad. Nassau, 11th March, 1898.

The Sparrow of the Bahamas, abundant everywhere, especially round habitations.

26. SPINDALIS ZENA (Linn.).

Spindalis zena (Linn.); Cory, B. Bahamas, p. 92; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 114.

♂ ad. Nassau, 29th March, 1898.
♂ ♂ imm. „ 25th August and 10th September, 1898.

♀ ♀ ♀ ♀ ad. Nassau, 10th March and 15th & 21st April, 1898.

This handsome bird is by no means rare, retiring to the thick bush during the summer, but frequenting the town in winter.

27. Piranga rubra (Linn.).

Piranga rubra (Linn.); Cory, Cat. W. Ind. B. p. 114.

♂ imm. Nassau, 5th April, 1898.

This specimen is, I believe, the first example recorded from the Bahamas, to which it can be considered only a very rare straggler.

28. Dolichonyx oryzivorus (Linn.).

Dolichonyx oryzivorus (Linn.); Cory, B. Bahamas, p. 97; id. Cat. W. Ind. B. p. 110.

♂ ♀ ♀ ♀. Nassau, 7th September, 1898.

Met with during the winter in large flocks.

29. Tyrannus griseus (Vieill.).

Tyrannus griseus (Vieill.); Cory, B. Bahamas, p. 99.

Tyrannus dominicensis Cory, Cat. W. Ind. B. p. 108.

♂ ♂ ♂ ad. Nassau, 22nd & 29th April, 1898.
♀ ad. ,, 29th April, 1898.

The commonest summer visitor, especially in the town, where a pair or more may be found in every garden.

30. Myiarchus sagræ (Gundl.).

Myiarchus stolidus var. *leucayensis* (Gosse) Bryant; Cory, B. Bahamas, p. 100.

Myiarchus sagræ (Gundl.); Cory, Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 108.

♂ ad. Nassau, 8th April, 1898.

Occasionally met with in the pine-barrens, but by no means abundant.

31. Blacicus bahamensis (Bryant).

Contopus bahamensis (Bryant); Cory, B. Bahamas, p. 101; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335.

Blacicus bahamensis (Bryant); Cory, Cat. W. Ind. B. p. 109.

♂ ad. Nassau, 8th April, 1898.
2 specimens imm. Nassau, 23rd & 28th August, 1898.

Very common in the pine-barren, but seldom seen elsewhere.

32. Pitangus bahamensis Bryant.

Pitangus bahamensis Bryant; Cory, B. Bahamas, p. 102; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 108.

♂ ♂ ♂ ad. Nassau, 29th March, 15th April, and 9th May, 1898.
♀ ♀ ♀ ♀ ♀ ad. „ 15th April, and 9th & 12th November, 1898.

Next to *Tyrannus griseus* by far the most abundant of the group. Generally met with in pairs on the pine-barrens, but sometimes seen in the town during the winter months.

[Anthrostomus carolinensis (Gm.).

On two occasions (7th May and 21st July) I flushed a bird which I have little doubt belonged to this species; none of the residents or natives I asked knew the bird, which is probably rather scarce. Cory mentions it as being a winter visitor, but possibly some remain to breed.]

33. Chordeiles minor Cab.

Chordeiles minor Cab.; Cory, B. Bahamas, p. 106; id. Cat. W. Ind. B. p. 105.

♀ ad. Nassau, 27th August, 1898.
Imm. „ 23rd July, 1898.

A very common summer visitor.

34. Doricha evelynæ (Bourc.).

Doricha evelynæ (Bourc.); Cory, B. Bahamas, p. 108; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 107.

Fairly common, but by no means abundant.

35. Ceryle alcyon (Linn.).

Ceryle alcyon (Linn.); Cory, B. Bahamas, p. 115; id. Auk, 1891, p. 294; id. Cat. W. Ind. B. p. 103.

♀ ad. Nassau, 13th October, 1898.

Several inhabiting every swamp by the sea-shore from October to March. Individuals vary, some being quite rufous on the fore neck.

[SAUROTHERA BAHAMENSIS Bryant.

I only once saw this bird, which, judging by the frequency with which its note is heard, is by no means rare in the thick bush. It is a very tame and skulking species, and I was able to get a good view at a distance of about 6 feet, the bird not attempting to fly away. At close quarters it is easily distinguishable by the slate colour of the bill and a bright-red patch by the eye. The note is a loud, hoarse scream.]

36. COCCYZUS MINOR MAYNARDI (Ridgw.).

Coccyzus minor (Gm.); Cory, B. Bahamas, p. 117.

Coccyzus minor maynardi (Ridgw.); Cory, Auk, 1891, p. 294; id. Cat. W. Ind. B. p. 102.

♂ ad. Nassau, 10th May, 1898.
♀ ad. ,, 30th August, 1898.

Not uncommon in the thick bush, although seldom seen. I never met with it during the winter months, but I may possibly have overlooked it. Although I have called this species *C. maynardi*, as it agrees closely with Ridgway's description, yet the differences between *C. maynardi* and *C. minor* appear to me of a very trifling character.

37. CROTOPHAGA ANI (Linn.).

Crotophaga ani (Linn.); Cory, B. Bahamas, p. 118; id. Auk, 1891, p. 294; Ridgw. op. cit. p. 335; Cory, Cat. W. Ind. B. p. 102.

♂♂♂♂ ad. Nassau, 12th & 25th April, 13th May, and 19th August, 1898.
♀ ad. ,, 15th April, 1898.

This species is fairly plentiful throughout the island, roaming about in parties of eight or ten; they seemed to feed chiefly on the ground, always, however, having one of the flock on guard, who would by his loud notes give warning of the approach of an intruder. The flock would not fly off at once, but perch on the highest trees, after which, if a person approached too near, they would make off in a long straggling line.

38. DRYOBATES VILLOSUS MAYNARDI Ridgw.

Picus villosus Linn.; Cory, B. Bahamas, p. 120.

Dryobates villosus maynardi Ridgw.; Cory, Cat. W. Ind. B. p. 104.

♂ ♀ ad. Nassau, 9th September, 1898.

A winter visitor inhabiting the pine-barrens. The most conspicuous difference between this form and the true *villosus* is in the length of the wing, which in the six specimens I measured varies from 3·9 to 4·3 inches, while the average length of wing in the larger species is 4·7 inches. The other points are supposed to be (1) more white in front of the eye, (2) dark streaks on the sides of the breast; but these differences, besides being comparative, vary considerably in both species.

39. SPHYRAPICUS VARIUS (Linn.).

Sphyrapicus varius (Linn.); Cory, B. Bahamas, p. 121; id. Auk, 1891, p. 294; id. Cat. W. Ind. B. p. 104.

♂ ♂ ad. Nassau, 5th & 23rd November, 1898.
♀ ♀ ad. „ 4th & 21st November, 1898.

A winter visitor, much more abundant and generally distributed than the last named.

40. STRIX FLAMMEA var. PRATINCOLA.

Strix flammea var. *pratincola* Bp.; Cory, B. Bahamas, p. 125; id. Auk, 1891, p. 294; id. Cat. W. Ind. B. p. 100.

♀ ad. Nassau, 18th June, 1898.

Met with on several occasions. Considered scarce by the inhabitants, the only Owl they know being a small brown species (*Speotyto*?).

[FALCO SPARVERIUS.

I saw a small Hawk, which was probably of this species, several times during the winter, but the bird was by no means common.]

41. COLUMBA LEUCOCEPHALA (Linn.).

Columba leucocephala (Linn.); Cory, B. Bahamas, p. 137; id. Cat. W. Ind. B. p. 96.

♂ ad. Clifton, N. P., 21st July, 1898.

Very abundant at certain seasons, especially during July and August; they were to be found only in the pine-woods far from the settlements.

42. ZENAIDA AMABILIS (Bp.).

Zenaida amabilis (Bp.); Cory, B. Bahamas, p. 138.

Zenaida zenaida (Bp.); Ridgw. Auk, 1891, p. 335; Cory, Cat. W. Ind. B. p. 97.

♂ ad. Nassau, 8th April, 1898.

A rather scarce Dove, met with in pairs on the pine-barrens.

43. COLUMBIGALLINA PASSERINA (Linn.).

Chamæpelia passerina (Linn.); Cory, B. Bahamas, p. 139.

Columbigallina passerina (Linn.); Cory, Auk, 1891, p. 294; id. Cat. W. Ind. B. p. 97.

♂ ♂ ad. Nassau, 14th April, 1898.
♀ ad. ,, 17th August, 1898.

An abundant resident, frequenting gardens, roads, and open spaces in the thick bush.

44. GEOTRYGON MARTINICA (Gm.).

Geotrygon martinica (Gm.); Cory, B. Bahamas, p. 141; id. Cat. W. Ind. B. p. 97.

♂ ad. Nassau, 10th October, 1898.

Frequently brought in with other Pigeons from the pine-barrens during the winter months.

45. COLINUS VIRGINIANUS (Linn.).

Ortyx virginianus (Linn.); Cory, B. Bahamas, p. 142.

Colinus virginianus (Linn.); Cory, Auk, 1891, p. 294; id. Cat. W. Ind. B. p. 96.

♂ imm. Nassau, 9th November, 1898.

Generally distributed over the island, especially in the open plantations.

46. SQUATAROLA HELVETICA (Linn.).

Squatarola helvetica (Linn.); Cory, B. Bahamas, p. 144.

Charadrius helvetica (Linn.); Cory, Cat. W. Ind. B. p. 94.

♂ ad. Nassau, 28th April, 1899.

The only example met with.

47. ÆGIALITIS VOCIFERA (Linn.).

Ægialitis vocifera (Linn.); Cory, B. Bahamas, p. 145; id. Cat. W. Ind. B. p. 95.

♂ ad. Nassau, 19th October, 1898.
♀ ♀ ad. „ 23rd & 24th November, 1898.

A common species in winter on open cultivated land.

48. ÆGIALITIS WILSONIA (Ord).

Ægialitis wilsonia (Ord); Cory, B. Bahamas, p. 147; id. Cat. W. Ind. B. p. 95.

♂ ad. Nassau, 7th May, 1898.
Imm. Clifton, N.P., 21st July, 1898.

Not common. Breeds along the shore.

49. ÆGIALITIS SEMIPALMATA (Bp.).

Ægialitis semipalmata (Bp.); Cory, B. Bahamas, p. 148; id. Cat. W. Ind. B. p. 95.

♂ ad. Nassau, 10th May, 1898.
♀ ♀ ♀ ♀ ad. „ 14th March, 29th April, and 5th & 7th May, 1898.

By far the commonest species of this genus, but still not very abundant.

50. ÆGIALITIS MELODA (Ord).

Ægialitis meloda (Ord); Cory, B. Bahamas, p. 148; id. Cat. W. Ind. B. p. 95.

Ad. Clifton, N.P., 21st July, 1898.

A single example, the only one seen.

51. TOTANUS SEMIPALMATUS Gm.

Totanus semipalmatus Gm.; Cory, B. Bahamas, p. 160.

Symphemia semipalmata (Gm.); Cory, Cat. W. Ind. B. p. 94.

♀ ad. Nassau, 18th April, 1898.

52. TOTANUS SOLITARIUS (Wils.).

Totanus solitarius (Wils.); Cory, Cat. W. Ind. B. p. 95.

♂ ad. Nassau, 10th May, 1898.

Not hitherto recorded from New Providence. Only one specimen was obtained; it was shot beside a ditch running through thick bush.

53. TRINGOIDES MACULARIUS (Linn.).

Tringoides macularius (Linn.); Cory, B. Bahamas, p. 162.

Actitis macularia (Linn.); Cory, Cat. W. Ind. B. p. 94.

♂ ad. Nassau, 10th May, 1898.
♀ ♀ ♀ ad. „ 18th & 28th April, 1898.

The only common Sandpiper met with; always to be seen along the shore in twos or threes at all times of the year.

54. ARDEA HERODIAS Linn.

Ardea herodias Linn.; Cory, B. Bahamas, p. 166; id. Auk, p. 294; id. Cat. W. Ind. B. p. 89.

♂ ad. Nassau, 6th December, 1898.

A winter visitor, not common, and very difficult to approach.

[ARDEA EGRETTA Gmel.

A bird, apparently of this species, inhabited a swamp for about three weeks in April, but did not remain.]

55. ARDEA RUFA Bodd.

Ardea rufa Bodd.; Cory, B. Bahamas, p. 170; id. Cat. W. Ind. B. p. 89.

♀ ad. Nassau, 5th November, 1898.

A common and resident species.

56. ARDEA VIRESCENS Linn.

Ardea virescens Linn.; Cory, B. Bahamas, p. 170; id. Cat. W. Ind. B. p. 90.

♂ ad. Nassau, 10th March, 1898.

Resident and fairly plentiful.

57. NYCTICORAX VIOLACEA (Linn.).

Nyctiardea violacea (Linn.); Cory, B. Bahamas, p. 173.

Nycticorax violacea (Linn.); Cory, Cat. W. Ind. B. p. 90.

♀ imm. Nassau, 18th April, 1898.
♂ ad. „ 8th January, 1899.

The commonest species of the group, frequently found on the sea-shore at night.

58. LARUS ATRICILLA Linn.

Larus atricilla Linn.; Cory, B. Bahamas, p. 208; id. Cat. W. Ind. B. p. 82.

♂ ad. Nassau, 3rd May, 1898.

Several birds were always to be seen in the harbour, but the species was not abundant.

59. Sterna antillarum (Less.).

Sterna superciliaris Vieill.; Cory, B. Bahamas, p. 213.

Sterna antillarum (Less.); Cory, Cat. W. Ind. B. p. 83.

♂ ad.	Nassau,	10th May, 1898.
♀ ad.	,,	18th June, 1898.

Several pairs of this little Tern visit the island in summer, and I think that they breed by some of the inland tidal lakes.

XLIV.—*Notes on the Birds observed on the Northern Parts of the Murman Coast, Russian Lapland, in* 1899. By Henry J. Pearson.

The winter of 1898–99 and the spring of the present year have been the worst in the North of Europe for more than forty years; only the oldest inhabitants can remember any season when so much snow fell and remained unmelted till so late in the summer. This has caused serious loss to many industries in Norway and Russia, and disturbed the domestic arrangements of the multitude of birds which resort to the Arctic regions every year for the breeding-season. The following account of a visit to Russian Lapland must give a very imperfect picture of the bird-life to be observed there, and I feel sure the same districts would yield better results during a normal year.

Accompanied by my brother, Mr. Charles Pearson, I left England on May 11th, and arrived in Tromsö on the 18th. The country was buried in snow down to sea-level, and the main streets of the town were encumbered with four to five feet of snow, compressed into a solid mass by the winter traffic. On the islands off the coast, where at the same date in 1896 thousands of eggs of Gulls and other birds were to be seen, only a few Great Black-backed and Herring-Gulls had commenced to lay, and their nests were often surrounded by snow four inches deep. Leaving Tromsö on May 20th, in a steamer I had chartered, we visited various islands, the Porsangerfjord, and other places, only to find winter practically in full possession of the country; and eventually we reached Vardö on the 30th.

I must ask the readers of 'The Ibis' to consult a map of Russian Lapland in order to follow our voyage. To the south of Vardö lies the great Varangerfjord, the western waters of which wash the Norwegian coast, and the southern that of Russian Lapland, the Ribatschi peninsula forming its eastern boundary. In the S.E. corner of the fjord lie two islands—Great and Little Henö—some 8 miles from the coast and due north of the entrance to Peisenfjord. These islands are the property of St. Trifon's monastery, which is situated on the Petschenga river, 18 versts from where it joins the sea at the head of Peisenfjord.

On the 31st of May, when we arrived at Great Henö, more than half its surface was covered with immense snow-drifts. Still the air and sea were alive with thousands of Arctic Terns and Puffins, while the shores were crowded with waders seeking food below high-tide mark. Only a few Great Black-backed Gulls had ventured to commence nesting. The next day we steamed into Peisenfjord, an inlet some ten miles long; but were soon stopped by ice, as for more than three miles the upper part was still entirely frozen. On the map published by Mr. Edward Rae in his book 'The White Sea Peninsula,' three lakes are shown on the Petschenga river, and the lines of forest-growth approach nearer the sea than in any other part of the Murman coast. It seemed probable this district would yield a great diversity of bird-life, and we had decided before leaving home to get there if possible. However, it was evidently not to be at present.

After spending some days in the lower parts of the fjord and the adjacent coasts, during which snow-storms were of constant occurrence and the filter-tap on deck was often frozen, we returned to Vardö on June 10th. Here we learned, in reply to our telegrams, that the rivers to the south were still frozen, and about fifty steamers were reported to be off the entrance of the White Sea, waiting for the ice to allow them to reach Archangel.

On June 14th we at last reached the head of Peisenfjord, having forced a way through the remaining ice; but it was clearly impossible to get up the country for at least a fortnight. The river was blocked with masses of ice; snow lay 4 feet deep over most of the land; and the buds of the birch-trees had scarcely commenced to swell. The few bare places round the peasants' houses were, however, alive with Bluethroats, Pipits, Temminck's Stints, &c., and we therefore decided to make an excursion round the Ribatschi peninsula—steaming first to Vaidda Gûba, a small fishing-port close to its north-west point. The snow here was beginning to melt, and the birds had dispersed more over the country. Sibt Havolok, at the north-east extremity, was our next anchorage. This was at one time an important place, with church, hospital, &c.; but the fish having left the neighbouring sea, most of the population removed also. There are large marshes behind the town, which are evidently much frequented by Waders and Arctic Terns in normal years. On June 19th the ground was solid ice a few inches below the surface, and the birds were in flocks or pairing. Continuing our voyage round the south coast, we landed in every bay where the shores showed any considerable area free from snow, seeing little of interest beyond some Buffon's Skuas nesting. The Ribatschi peninsula consists chiefly of high ground which even in good seasons must have a very bare and desolate character. A number of lakes and tarns are scattered over the interior, forming the sources of several small rivers. We saw nothing that could possibly be called a tree, although some of the valleys contained low birches and willow-scrub. I do not think Geese breed commonly in the district, as a Norwegian said he had never seen their eggs, but his father had once found a nest many years ago. Port Novaya Zemlya (named by Lütke), at the head of the inlet separating the peninsula from the main, is only a collection of some dozen fishermen's huts; and the isthmus is scarcely an English mile across, with several well-marked sea-beaches, showing that the sea was connected with the Varangerfjord in very recent geological times.

On June 22nd we entered Litsafjord, a deep indentation running into the mainland between the isthmus and Kola-fjord, and spent three days exploring the district round Litsa river. The country here was much freer from snow and the ice had gone out of the river; but the lakes—even within 100 feet of the sea-level—were still frozen. Our guide was a Finn, Johan Regina by name, who had been employed by Wolley for eighteen months in Lapland, and told us several incidents about him. Unfortunately everything was translated through two languages, or we might have learnt more.

Returning to Henö on the 26th, we spent three glorious days there in camp—days that one remembers long after the disagreeables of Arctic travel are forgotten—when the sun went round his course without a cloud in the sky; and the only indications of midnight were a coolness in the air, a slight decrease in the light for photographic purposes, and perhaps a little more restfulness among the noisy Arctic Terns. The snow had almost entirely melted, vegetation was rapidly springing into renewed life, large masses of marsh-marigold and *Trollius europæus* made the scene bright with their yellow flowers, and the lake, now free from ice, had often 150 Ducks on its surface. Sleep seemed to be rather a waste of time, and it was 5 A.M. before we could bring ourselves to turn in. I have never visited any other spot where bird-life was so numerous or so diversified; on the larger island—only four miles long—we recorded 38 species of birds.

Leaving the islands late on the 28th, we steamed up Peisenfjord, and at last, on July 2nd, succeeded in penetrating the interior as far as Petschenga lake (there is only one, not three), the twenty miles occupying twenty-four hours! Even this would have been absolutely impossible without the kind assistance of the monks of St. Trifon's monastery, who provided horses and carriages to convey us as far as possible, and men to carry the tents over the last three miles.

We remained encamped on the shore of the lake until the 12th, when mosquitoes made the district unbearable and forced us to retreat. During our stay we met with forty-one species of birds and found many of them nesting, fuller particulars of which will be found in the following pages.

In conclusion I would say, to any desirous of following our footsteps, it is necessary to obtain permission from the Russian Government, through our Foreign Office, to travel in the interior; and attention to this may save much after-trouble.

1. TURDUS ILIACUS.

The Redwing was common on the Litsa and Petschenga rivers, nesting generally in damp localities. All the nests found on the former river about June 22nd contained 6 eggs, nearly fresh, while those in the Petschenga district on July 4th had young.

2. TURDUS PILARIS.

Common in the same localities as the Redwing, and the incubation was in similar stages.

3. SAXICOLA ŒNANTHE.

There were several pairs of Wheatears on Henö, where they appeared to be breeding in the Puffins' holes. Nests with eggs were found near the Petschenga river from July 1st to 7th. They were placed above the line of tree and bush growth, with one exception. This was in the centre of a short log lying near some huts on Lake Arveden, and, thinking the bird came from underneath, we rolled the log over, but fortunately without breaking any of the 7 eggs.

4. RUTICILLA PHŒNICURUS.

A nest of the Redstart, with 6 eggs, was taken in the Litsa valley June 23rd, from the top of a rotten birch-stem. We found another nest with young in the Petschenga valley on July 7th.

5. CYANECULA SUECICA.

We saw the Red-spotted Bluethroat on Henö, and at several points of the Ribatschi peninsula, Litsa river, and Peisenfjord, but not in the upper part of the Petschenga valley. In all cases it was within a few miles of the sea. The nests up to June 29th contained only 1 to 4 eggs.

6. PHYLLOSCOPUS TROCHILUS.

The Willow-Wren was quite the commonest small bird in the inland districts. Nests contained full clutches of 7 eggs about July 4th.

7. PARUS CAMTSCHATKENSIS.

The only Tit seen during our stay in the country was a Siberian Marsh-Titmouse. It was shot near Petschenga lake on July 4th, and proved to be a female with incubation-spots.

8. MOTACILLA ALBA.

One or two pairs of White Wagtails were at most places visited, generally near the habitations of man. Eggs found on Henö on June 26th were slightly incubated.

9. MOTACILLA VIRIDIS.

Several pairs of Grey-headed Wagtails were seen near the mouth of the Petschenga river.

10. ANTHUS PRATENSIS.

The Meadow-Pipit was generally common. Eggs only slightly incubated were found till July 9th.

11. ANTHUS CERVINUS.

We found the Red-throated Pipit on both the Litsa and Petschenga rivers, nesting in marshy localities. Nests with 6 eggs were taken from June 22nd to July 10th.

12. ANTHUS GUSTAVI ?

When we first landed at the head of Peisenfjord on June 15th the manure-heaps and small open spaces round the houses were alive with birds. Among these was a Pipit, very distinct from the Meadow-Pipits, being larger, with darker and broader stripes on the breast. It was only 15 yards away, and we watched it through our glasses some time. Unfortunately our guns were on board; and when we returned next day, this bird—with most of the others—was gone. I have no doubt, however, it was a Petchora Pipit.

13. Cotile riparia.

We observed several birds, believed to be Sand-Martins, round the upper monastery on the Petschenga river; but shooting was not permitted there.

14. Passer domesticus.

I saw a House-Sparrow on the monks' house at the head of Peisenfjord, June 16th; and, not being allowed to shoot it there, I persuaded it to go as far as the boundary-fence, where it fell a victim. A pair had young in the gable of this house on July 2nd.

15. Fringilla montifringilla.

A few pairs of Bramblings were seen on the Litsa and Trifonovka rivers, but it was only on reaching our camping-ground near Petschenga lake that the birds became common. We found a number of nests between July 2nd and 10th, all in birches, the greater part containing incubated eggs. The hens sat close; one pecked my finger before she would leave the nest, and another retained her seat while my brother climbed 20 feet up the thin birch-tree which held the nest.

16. Linota exilipes.

Coues's Redpolls were nesting near the Litsa and Petschenga rivers in birch and dwarf juniper, but not nearly so common as around Lake Ukanskoe in 1895.

17. Emberiza schœniclus.

We saw Reed-Buntings near all the three rivers visited. The last nest found (July 11th) was in a hollow birch-stump, and consisted of a few grasses with chips of wood. As there were only 2 eggs, fresh, the bird had probably been disturbed.

18. Plectrophenax nivalis.

Snow-Buntings were building among the rocks on Henö, June 7th. We saw them at most points visited on the Ribatschi peninsula, but never inland.

19. Calcarius lapponicus.

Lapland Buntings were common on Henö, where we found several nests in the *Empetrum nigrum*, and in the tussocks of coarse grass, whose roots form mounds four to six feet high. We also saw this species at most of the places visited near the sea, but not inland.

20. Otocorys alpestris.

For some time after our first arrival Shore-Larks were in flocks. Two nests were ready for eggs on June 18th at Vaidda Gûba, and on the 21st we found one with two eggs at Port Novaya Zemlya.

21. Perisoreus infaustus.

A family party of Siberian Jays was in a marshy wood near the Litsa river—a spot containing more breeding birds than any other we passed through on the mainland. The young still showed a few traces of down among the feathers on June 24th.

22. Corvus corax.

A Raven's nest, near the mouth of Peisenfjord, contained young with quill-feathers on June 6th. The parents probably went to Henö (8 or 9 miles off) for part of their food-supply, as we saw two hunting over that island, pursued vigorously by Terns and Skuas.

23. Corvus cornix.

Hooded Crows were seen in Peisen and Litsa Fjords, but were not so common as in Norway.

24. Picoides tridactylus.

We found a nest of the Three-toed Woodpecker with young in a rotten tree on July 3rd near the Petschenga river; unfortunately one of the old birds had been shot for identification before the nest was seen. Another pair came close to us the next day. Many of the dead trees in the district had been bored by this species.

25. Cuculus canorus.

The Cuckoo was heard or seen on most days, in the wooded districts.

26. Surnia ulula.

We shot a Hawk-Owl out of a family party on July 7th near the Petschenga river; the others kept near us for some time. These were the only Owls seen inland.

27. NYCTEA SCANDIACA.

The fresh remains of a Snowy Owl were found on Henö.

28. BUTEO LAGOPUS.

Rough-legged Buzzards were much the commonest of the birds of prey in the inland districts. We found eggs up to July 3rd. One nest contained one egg only, so nearly hatched that the chick's call could be heard 12 yards away; while another held five young, with their quill-feathers showing. The latter number is unusually large. One parent of these five swooped within two yards of the intruder when at the nest, the only occasion on which I have known this species make a bold attempt to defend its young. Several nests were placed in Scotch firs.

29. HALIAËTUS ALBICILLA.

We saw three White-tailed Eagles over Litsafjord on June 23rd. A nest, placed on the face of a precipice near the head of the fjord, was empty at the time of our visit. In the Petschenga district our Finn guide also took us to a nest which he said belonged to this species; it was an immense structure of sticks, &c., in a Scotch fir, and had not apparently been occupied for the last two seasons.

30. PANDION HALIAËTUS.

We searched a considerable area round the Petschenga river in the hope of finding an Osprey's nest, but saw only one bird, which came to fish once in Petschenga lake. These poor birds are persecuted here as in other countries, for the Finns cut down any tree, during the winter, in which they find a last year's nest. Knowing that this district was absolutely undisturbed from March to the middle of July, I had great hope, until I heard the above, of finding Ospreys on the numerous lakes; but with a reward paid for both birds and eggs in Norway (I believe also in Sweden), and the birds systematically driven away in Russian Lapland, the species may well become scarce.

31. PHALACROCORAX CARBO. Cormorant.

32. PHALACROCORAX GRACULUS. Shag.

Several seen on different parts of the coast.

33. Anser sp.?

Several 'Grey' Geese were seen, and believed to be Bean-Geese, but we could not positively identify any of them.

34. Cygnus musicus.

A pair of Whooper Swans were seen on the Trifonovka river on June 29th. We obtained two eggs from a nest in the Petschenga district on July 6th; one was addled, the other slightly incubated. Our Finn, Ivan, expressed a strong opinion that the Eagles had taken the others.

35. Mareca penelope.

A pair of Wigeon were on Henö, apparently nesting. We found a nest near Petschenga lake on July 2nd, and another on the 5th with eggs nearly fresh.

36. Harelda glacialis.

Long-tailed Ducks were very numerous along the whole coast. We also saw them inland as far as we penetrated.

37. Somateria mollissima.

A large number of Eiders were nesting on Henö; in fact they were nearly as common as on Stor Tamsö in the Porsangerfjord. We heard the value of the down had fallen so much that it scarcely paid to collect and clean.

38. Œdemia nigra.

Common Scoters were seen on Henö and several parts of the coast. Three or four males were constantly on Petschenga lake, so their mates were probably nesting "somewhere" in the neighbouring woods; but to look for Ducks' nests in such a country is rather hopeless work, and finding them is largely a matter of chance.

39. Œdemia fusca.

Velvet Scoters were nesting on Henö, June 28th, the eggs being slightly incubated. Several males were also on Petschenga lake, where they always kept separate from the Common Scoters, even when disturbed.

40. Mergus merganser.

The only two nests of Goosanders met with were in fishermen's huts near the Petschenga, the birds having entered in both cases through a broken window. One nest contained 15 eggs, and the hut was in a small village where at least one man was living at the time. We saw several pairs on Henö, and the species was common on most of the fjords visited.

41. MERGUS SERRATOR.

Red-breasted Mergansers were seen on Henö, and generally where the preceding species was noticed. A nest with 6 eggs was placed under a birch-tree on a small island in Lake Petschenga, partially concealed by some sticks.

42. TETRAO UROGALLUS.

Two female Capercaillies seen near Lake Petschenga.

43. LAGOPUS MUTUS.

A pair of Ptarmigan were on high ground near Peisenfjord.

44. LAGOPUS ALBUS.

Willow-Grouse were met with in the Litsa and Petschenga valleys, but were not numerous anywhere, three being the greatest number ever seen in 10 hours' walk.

45. EUDROMIAS MORINELLUS.

We saw several Dotterels near Peisenfjord on June 3rd and 4th. A nest placed at an elevation of 850 feet, near the Petschenga, contained eggs just hatching on July 10th, and another bird was brooding three young on the same hill that day.

46. ÆGIALITIS HIATICOLA.

We first observed Ringed Plovers at Henö on June 13th, so they must have gone north later than usual this year. They were afterwards met with on several parts of the coast and near Petschenga lake.

47. CHARADRIUS PLUVIALIS.

A few pairs of Golden Plovers occupied suitable ground on the Litsa and Petschenga rivers.

48. STREPSILAS INTERPRES.

Turnstones were well represented among the numerous Waders feeding on the beach when we first visited Henö, all so tame that they allowed us to approach within a few yards before taking wing. A nest with four eggs was found on June 13th among some dwarf sallows a foot high, at a time when half the island was covered with snow.

Between the 26th and 28th we took six more clutches, all obtained by watching the bird to the nest. Three of these were under stones near the shore, two in tussocks of grass, and one in a Puffin's hole; the three latter some distance from the sea. The sixth gave considerable trouble. We had noticed the birds during the day, and went up the hill about 10 P.M. to try for the nest. As we lay down some 80 yards apart, the birds took up a position 100 yards away from both of us. For twenty minutes they never moved more than a yard; then they worked gradually down to a point midway between us, the same bird always leading. They next turned towards me, and for half an hour I sat scarcely daring to wink —troubled, too, with a cough that endeavoured to assert itself. Nearer and nearer by many a zigzag the leading bird approached, until it was within six yards. Then an old Puffin put its head up out of one of the numerous holes near, regarded me steadily first with one eye and then the other, and decided promptly to retire again. This shook the Turnstones' confidence and caused a retreat. A careful search failed to show the nest; but when we went up next day the sentinels bird was off duty, and the other came out of a Puffin-hole close to our feet. The nest was eight yards from my seat of the night before, and contained three half-incubated eggs, placed on some dead sorrel-stalks 18 inches inside the burrow. We also saw these birds on the Ribatschi peninsula.

49. HÆMATOPUS OSTRALEGUS.

Oyster-catchers were common on Henö. One or two pairs were also seen at most places where we landed.

50. PHALAROPUS HYPERBOREUS.

We saw a number of the pretty Red-necked Phalaropes on Henö and the Ribatschi peninsula. The first nests were found on June 28th, some of them containing fresh eggs.

51. GALLINAGO CŒLESTIS.

Two or three birds, disturbed in a marsh near the lower monastery on the Petschenga, were thought to be Common Snipe.

52. TRINGA ALPINA.

When we first landed on Henö there were a far larger number of Dunlins than would probably nest there, and the greater part had left on our next visit. We also saw them on several parts of the Ribatschi peninsula and in Peisenfjord, but not inland. The first nest with eggs was found on June 24th.

53. TRINGA MINUTA.

Some 16 to 20 Little Stints were on Henö June 28th, but did not appear to be breeding. When we returned on July 13th there was no trace of them. However, we found a nest of four eggs on Little Henö, June 28th, the bird coming a foot from me as I blew the eggs, and often allowing my man to put his hand within 6 inches of it.

54. TRINGA TEMMINCKI.

Temminck's Stints were common on the shores of Peisenfjord, June 14th; also on Litsafjord. They were breeding on July 1st among rather thick birch-scrub some 200 yards from the Trifonovka river, the birds often settling on the birch-trees.

55. TRINGA STRIATA.

Several scores of Purple Sandpipers were feeding on the shore of Henö when we landed, May 31st, and were very tame. Many were still there on June 13th and 17th, but we saw none on July 13th. They were also common on the shores of the fjords during the early part of our visit.

56. MACHETES PUGNAX.

Ruffs were first seen on Henö June 13th. While in camp on the island, June 26th, four played and fought in a marsh near the tent for some time. We did not see the species in any other part of the country.

57. Totanus hypoleucus.

A number of Common Sandpipers were about Petschenga lake, and we found two nests there on July 5th, with eggs slightly incubated.

58. Totanus calidris.

One or two Redshanks were seen in most suitable localities.

59. Limosa sp.?

Two Godwits were feeding on a sandbank near the ship in Litsafjord on the night of June 23rd, but we could not distinguish to which species they belonged.

60. Numenius phæopus.

In both the Peisen and Litsa districts Whimbrel were fairly common.

61. Sterna macrura.

On May 31st Arctic Terns were over Henö in thousands; I have never seen so many together before. We first noticed a few single eggs on June 17th, and by the 24th the birds were nesting in all directions—on the wet sphagnum-moss in the marshes, on the *Empetrum nigrum* which covered the higher ground, and among the shingle of the shore; but there were no young, and of the eggs our men collected for eating few were more than half incubated. During a visit of two hours on July 13th we never saw a Tern on the island. Either they had hatched and reared their young in 17 days, or their nests had been robbed so often that they had given up the effort. In most cases the colour of the eggs agreed with their surroundings. We found young just hatched on July 9th, at an elevation of 700 feet, near Petschenga lake.

62. Larus canus.

A number of Common Gulls were nesting on Henö. We also saw the birds on the Litsa and Petschenga rivers.

63. Larus argentatus.

64. Larus marinus.

Nesting on Henö. These species were also seen at several other parts of the coast.

65. LARUS FUSCUS.

Several Lesser Black-backed Gulls were constantly about the ship in Peisenfjord during the early part of our stay. We first saw them on Henö, June 26th; a large colony had then arrived, and were nesting near the shore down the east side of the island.

66. RISSA TRIDACTYLA.

An immense colony of Kittiwakes were breeding on the cliffs of Sharanov Point, at the south-east corner of Ribatschi peninsula, June 20th. Many of the eggs were much incubated, but we saw no young.

67. STERCORARIUS CREPIDATUS.

Richardson's Skuas were very common on Henö, the light and dark forms being nearly equal in number. We took the first egg on June 13th, and continued to see other eggs till July 13th, the latter probably belonging to birds we had disturbed before. One nest contained three eggs, all nearly fresh. These birds were also nesting on various points of the Ribatschi peninsula and near Litsafjord.

68. STERCORARIUS PARASITICUS.

Buffon's Skuas were nesting at two places on Ribatschi peninsula (June 20th) within an hour's walk of the sea and at no great elevation; the higher land was then all covered with snow. On July 9th three pairs had eggs, much incubated, at an elevation of 700 feet (considerably above the line of bush-growth), some miles beyond Petschenga lake. This species generally selects a breeding-place on high ground further from the sea than the preceding one.

69. ALCA TORDA.

We frequently saw Razorbills with the Puffins on Henö, and presumed they were also breeding in holes, as no suitable rocks or cliffs existed there.

70. URIA GRYLLE.

Black Guillemots were very common round Henö, and generally distributed along all the coasts visited.

71. Fratercula arctica.

Immense numbers of Puffins were breeding on Henö, and the air at times appeared full of them. The Russians catch quantities by placing fishing-nets over the ground where holes are most plentiful. The earliest eggs, found June 5th, were under stones, as even on the 13th the peat was frozen hard one or two inches below the surface, and the old burrows contained ice.

72. Colymbus adamsi.

An immature bird of this species was brought on board, June 10th, in Peisenfjord; it had just been caught in the salmon-nets—a common fate for the Divers there, as several of the next species were also offered to us.

73. Colymbus arcticus.

74. Colymbus septentrionalis.

Both species were numerous on all the fjords, because the lakes were frozen till nearly the end of June.

List of Birds observed on Great and Little Henö Islands, May 31*st, June* 1*st,* 7*th,* 13*th,* 17*th,* 26*th,* 28*th, and July* 13*th,* 1899.

1. Wheatear.
2. Bluethroat.
3. Willow-Wren.
4. White Wagtail.
5. Meadow-Pipit.
6. Snow-Bunting.
7. Lapland Bunting.
8. Shore-Lark.
9. Raven.
10. Snowy Owl.
11. Cormorant.
12. Grey Goose (sp.?).
13. Wigeon.
14. Long-tailed Duck.
15. Eider.
16. Common Scoter.
17. Velvet Scoter.
18. Goosander.
19. Merganser.
20. Ringed Plover.
21. Turnstone.
22. Oyster-catcher.
23. Red-necked Phalarope.
24. Dunlin.
25. Little Stint.
26. Purple Sandpiper.
27. Ruff.
28. Redshank.
29. Arctic Tern.
30. Common Gull.
31. Herring-Gull.
32. Great Black-backed Gull.
33. Lesser Black-backed Gull.
34. Richardson's Skua.
35. Razorbill.
36. Black Guillemot.
37. Puffin.
38. Red-throated Diver.

List of Birds observed at Viadda Gûba, N.W. point of the Ribatschi Peninsula, June 18*th*, 1899.

1. Bluethroat.
2. White Wagtail.
3. Meadow-Pipit.
4. Snow-Bunting.
5. Lapland Bunting.
6. Shore-Lark.
7. Eider Duck.
8. Ringed Plover.
9. Golden Plover.
10. Turnstone.
11. Dunlin.
12. Purple Sandpiper.
13. Redshank.
14. Arctic Tern.

Gulls in harbour not identified.

Sibt Havolok, N.E. point of Ribatschi Peninsula, June 19*th*, 1899.

1. White Wagtail.
2. Meadow-Pipit.
3. Snow-Bunting.
4. Lapland Bunting.
5. Shore-Lark.
6. Raven.
7. Cormorant.
8. Grey Goose (sp. ?).
9. Eider Duck.
10. Dotterel.
11. Golden Plover.
12. Oyster-catcher.
13. Red-necked Phalarope.
14. Dunlin.
15. Temminck's Stint.
16. Arctic Tern.
17. Great Black-backed Gull.
18. Richardson's Skua.
19. Buffon's Skua.
20. Black Guillemot.

South Coast of Ribatschi Peninsula, June 20*th and* 21*st*, 1899.

1. Redwing.
2. Wheatear.
3. Bluethroat.
4. White Wagtail.
5. Meadow-Pipit.
6. Red-throated Pipit.
7. Lapland Bunting.
8. Shore-Lark.
9. Raven.
10. Falcon (sp. ?).
11. Rough-legged Buzzard.
12. Long-tailed Duck.
13. Willow-Grouse.
14. Ringed Plover.
15. Golden Plover.
16. Oyster-catcher.
17. Red-necked Phalarope.
18. Dunlin.
19. Temminck's Stint.
20. Redshank.
21. Arctic Tern.
22. Kittiwake.
23. Richardson's Skua.
24. Buffon's Skua.

Litsa River and Fjord, June 22nd and 24th, 1899.

1. Redwing.
2. Fieldfare.
3. Redstart.
4. Bluethroat.
5. Willow-Wren.
6. White Wagtail.
7. Meadow-Pipit.
8. Red-throated Pipit.
9. Brambling.
10. Coues's Redpoll.
11. Reed-Bunting.
12. Shore-Lark.
13. Siberian Jay.
14. Hooded Crow.
15. Cuckoo.
16. Rough-legged Buzzard.
17. White-tailed Eagle.
18. Cormorant.
19. Grey Goose (sp.?).
20. Long-tailed Duck.
21. Common Scoter.
22. Goosander.
23. Willow-Grouse.
24. Ringed Plover.
25. Golden Plover.
26. Temminck's Stint.
27. Redshank.
28. Godwit (sp.?).
29. Whimbrel.
30. Arctic Tern.
31. Common Gull.
32. Great Black-backed Gull.
33. Richardson's Skua.

Peisenfjord District, within two miles of salt water.

1. Redwing.
2. Fieldfare.
3. Wheatear.
4. Bluethroat.
5. Willow-Wren.
6. White Wagtail.
7. Grey-headed Yellow Wagtail.
8. Meadow-Pipit.
9. Petchora Pipit.
10. Red-throated Pipit.
11. House-Sparrow.
12. Brambling.
13. Coues's Redpoll.
14. Snow-Bunting.
15. Lapland Bunting.
16. Shore-Lark.
17. Raven.
18. Hooded Crow.
19. Cuckoo.
20. Rough-legged Buzzard.
21. Cormorant.
22. Grey Goose (sp.?).
23. Whooper Swan.
24. Long-tailed Duck.
25. Eider Duck.
26. Velvet Scoter.
27. Goosander.
28. Ptarmigan.
29. Dotterel.
30. Ringed Plover.
31. Golden Plover.
32. Oyster-catcher.
33. Red-necked Phalarope.
34. Common Snipe (?).
35. Dunlin.
36. Temminck's Stint.
37. Purple Sandpiper.
38. Redshank.
39. Whimbrel.
40. Arctic Tern.
41. Lesser Black-backed Gull.
42. Kittiwake.
43. Richardson's Skua.
44. Buffon's Skua.
45. Black Guillemot.
46. White-billed Great Northern Diver.
47. Black-throated Diver.
48. Red-throated Diver.

Petschenga Lake and District, July 3rd and 12th, 1899.

1. Redwing.
2. Fieldfare.
3. Wheatear.
4. Redstart.
5. Willow-Wren.
6. Siberian Tit.
7. White Wagtail.
8. Grey-headed Wagtail.
9. Meadow-Pipit.
10. Red-throated Pipit.
11. Sand-Martin (?).
12. Brambling.
13. Coues's Redpoll.
14. Reed-Bunting.
15. Shore-Lark.
16. Hooded Crow (?).
17. Three-toed Woodpecker.
18. Cuckoo.
19. Hawk-Owl.
20. Rough-legged Buzzard.
21. White-tailed Eagle (?).
22. Osprey.
23. Whooper Swan.
24. Wigeon.
25. Long-tailed Duck.
26. Common Scoter.
27. Velvet Scoter.
28. Goosander.
29. Merganser.
30. Capercaillie.
31. Willow-Grouse.
32. Dotterel.
33. Ringed Plover.
34. Golden Plover.
35. Common Sandpiper.
36. Redshank.
37. Whimbrel.
38. Arctic Tern.
39. Common Gull.
40. Buffon's Skua.
41. Black-throated Diver.

XLV.—*On some Hornbill Embryos and Nestlings.* By R. Shelford, B.A. (Curator of the Sarawak Museum). *With Field-notes by* C. Hose.

(Plates VIII.–X.)

The material forming the subject of this paper consists of one 14-days-old embryo of *Anthracoceros malayanus* (Stage 1); a nearly ripe embryo of *Buceros rhinoceros,* another of *Rhytidoceros undulatus* (Stage 2); one newly-hatched nestling of *B. rhinoceros,* two (of approximately the same age) of *R. undulatus* (Stage 3); a six-weeks-old nestling of *B. rhinoceros* (Stage 4); and two young specimens of *A. malayanus,* just capable of flight (Stage 5).

I am indebted to Mr. G. J. Sands, Government Planter, for presenting me with the embryo and nestlings of *R. undulatus,* and to Mr. C. Hose, Resident of Baram, for the loan of all the rest of the material. To both these gentlemen I herewith beg to tender my most grateful thanks.

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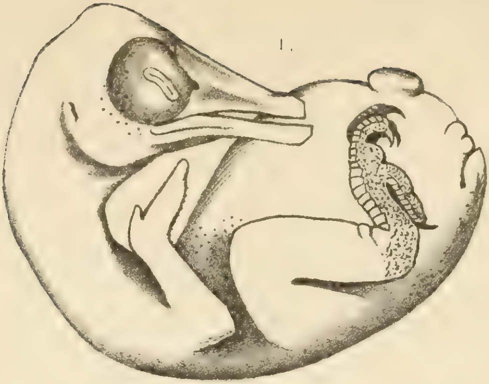

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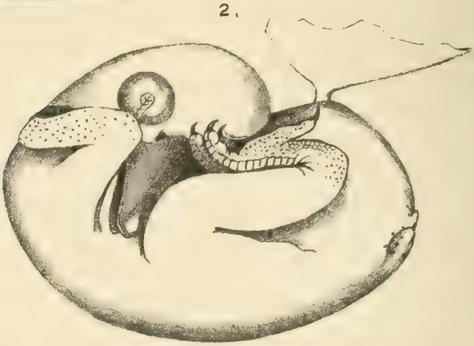

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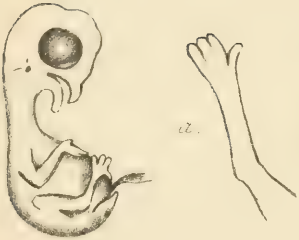

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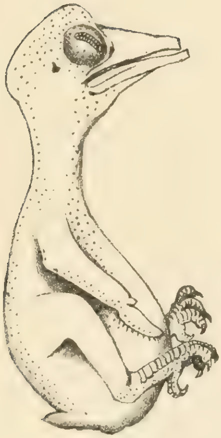

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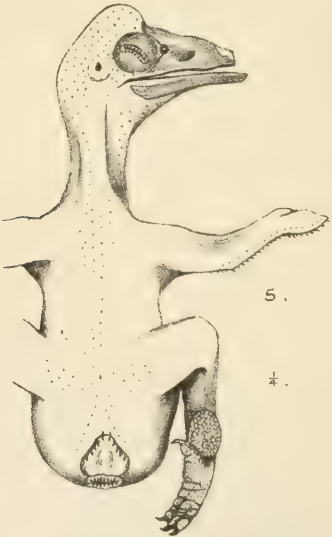

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HORNBILL EMBRYOS AND NESTLINGS.

Stage 1.—14-days-old embryo of *Anthracoceros malayanus.* (Pl. VIII. figs. 3 & 3 *a*.)

The disposition of the toes is the only external feature which calls for much notice. The hallux is well separated from the other digits, but has not yet taken up the backward position characteristic of the Bucerotidæ; it still points forward and inward. The other digits are still united to each other throughout the greater part of their length, the third being a trifle the longest. The plantar surface of the foot is directed outward. There are no traces of feathers, save on the border of the pygidium, where one may perceive eight minute papillæ, marking the point of exit of the rectrices. The pygidium is acutely pointed and long.

Dimensions (in millimetres).—Total length 28; upper mandible 2; lower mandible 5·3; antebrachium 5; manus 4; tibia 6·2; foot and tarso-metatarsus 5·5.

Stage 2.—Nearly ripe embryos of *Buceros rhinoceros* and *Rhytidoceros undulatus.* (Pl. VIII. figs. 1 & 2.)

Buceros rhinoceros.—The most striking feature of the embryo is its absolute nakedness; a few feather-papillæ may be distinguished with difficulty round the angle of the gape and behind the eye, on the lower part of the back and on the chest, but it is impossible to define very accurately their exact extent. The rectrices and remiges are still invisible, minute depressions marking their future points of emergence. The nostril lies close under the eye and is very small. The upper mandible is large, but no trace of the huge epithema of the adult is yet to be seen. Anteriorly it is sharply ridged and abruptly truncated: a slight depression occurs just before the tip; the sharp edge of the extreme tip must act as an egg-tooth, no actual egg-tooth being present. The lower mandible projects somewhat beyond the upper; its upper margin is slightly sinuous, and on its extreme anterior edge is a minute papilla.

The eye-opening is bounded by fleshy, finely-wrinkled eyelids. The cloacal lips are remarkably prominent, but the opening of the oil-gland is not visible; the pygidium is much more rounded than was the case in Stage 1. The foot is very slightly flattened laterally; the two-jointed hallux is now completely turned backward, as in the adult; the third digit is the longest. Dorsally the digits and "tarsus" are covered with one row of rectangular scutes, ventrally with granular scales, smallest on the sole and on the somewhat swollen "heel" (junction of tibia and tarso-metatarsus).

Dimensions.—Total length 157; upper mandible (to nostril) 14; lower mandible (to gape) 23; neck 44; antebrachium 16; manus 14; tibia 21; tarso-metatarsus 16; 3rd digit 7·5.

Rhytidoceros undulatus.—A slightly older embryo than that just described, but the differences between the two are very slight. The position of the embryo in the egg is shown in the figure; each manus is bent at right angles to the cubitus and lies under the throat, their tips almost touching; the right foot lies with the plantar surface uppermost, the left with that surface outermost.

The rectrices and remiges have just protruded, while papillæ marking the future major coverts are plainly to be seen on the cubitus and manus; no other papillæ, however, can be distinguished. The beak is shorter than in the corresponding stage of *B. rhinoceros* and rather deeper. A small deposition of calcareous salts at the extreme tip of the upper mandible is noteworthy; I have not noticed it in *B. rhinoceros* either at this or the subsequent stage. The lower mandible bears the minute papillæ on its anterior edge already alluded to. The opening of the oil-gland, with a surrounding ring of feather-papillæ, is apparent. The foot is as already described.

Dimensions.—Total length 159; upper mandible 12; lower mandible 21; antebrachium 20; tibia 19; tarsus 16; hallux 7; 3rd digit 6·5.

Stage 3.—Newly-hatched nestlings of *Buceros rhinoceros* and *Rhytidoceros undulatus*. (Pl. VIII. figs. 4 & 5.)

Buceros rhinoceros.—The conical shape of the head, the entire absence of feathers, and the loose and closely-wrinkled skin are the most noteworthy features at this stage. The dense wrinkles of the skin, most prominent on the head and neck, render it a matter of great difficulty to define the exact boundaries of the feather-papillæ tracts, but, so far as I can make them out, they are as follows:—A *pteryla capitis* clothes the whole of the head with the exception of the anterior half of the eye and a small area below the gape; dorsally this pteryla can be faintly distinguished as running into the *pt. dorsalis,* which runs down to the pygidium, broadening in the lumbar region and forking before its termination. The *pt. ventralis* starts from the throat, runs down the ventral aspect of the neck, and bifurcates at the junction of the neck and body, the branches running down to the end of the sternum. A small *pt. femoralis* is just visible. The tips of the ten rectrices, of the eleven primaries, and of ten cubitals have made their appearance, while on the manus the upper *tectrices majores,* and on the cubitus the upper *tectrices majores* and *mediæ,* are to be seen slightly protruding. An area, apparently devoid of papillæ, is present on each side of the neck (see later). The eyes are still closed, the nostrils lying close under them. The beak is as already described; the tongue is relatively much larger than in the adult, occupying the greater part of the floor of the mouth. The pygidium projects upward and anteriorly, a position exactly opposite to that which it occupies in the embryo; the opening of the oil-gland is now visible; the cloacal aperture is very prominent. The foot is less symmetrically disposed than in the previous stage, the plantar surface being turned somewhat outward. As before, the "heel" is very prominent; it is chiefly on this part of the foot that the nestling rests, not on the plantar, as erroneously figured in Wallace's 'Malay Archipelago' (p. 105 of the 1894 edition). Both "heel" and planta are covered with small granular scales. The portion of the foot in between has larger, though still granular, scales, which, however, in the adult become scutes. The second digit is bound by one joint, the fourth by two joints, to the third digit.

Dimensions.—Total length 158; upper mandible 18; lower mandible 26; neck 30; cubitus 20; manus 13; tibia 23; tarso-metatarsus 19; hallux 9; 3rd digit 11.

Rhytidoceros undulatus.—Of this species I have two young nestlings, one slightly older than the other; both are almost identical in their external characters, and differ but little from the nestling of *B. rhinoceros* just described. The beak is deeper and more sinuous in outline than in *B. rhinoceros*; a deposition of calcareous salts on the tip of the upper mandible marks the shell-breaking junction of this part; the lower mandible is less abruptly truncated, and the small papilla has disappeared in the older of the two specimens. The rectrices and remiges are a trifle more advanced than in *B. rhinoceros*; but the distribution of the feather-papillæ and their state of development is the same.

Dimensions of Specimen No. 1.—Total length 155; upper mandible 21; lower mandible 31; neck 33; antebrachium 19; manus 18; tibia 35; tarso-metatarsus 27; hallux 10; 3rd digit 9·5.

Dimensions of Specimen No. 2.—Total length 165; upper mandible 24; lower mandible 34; neck 35; antebrachium 24; manus 22; tibia 41; tarso-metatarsus 27; hallux 11; 3rd digit 9·5.

Stage 4.—One six-weeks-old nestling of *Buceros rhinoceros.*
(Pl. IX. figs. 1, 1 *a*, & 2.)

I, unfortunately, have nothing intermediate between this and Stage 3; but I have waited so long for material to fill this gap that I quite despair of ultimate success. The head is no longer conical in shape, the beak is much longer proportionally to its depth, and the tongue is proportionally smaller. The cloacal aperture is most remarkably prominent, protruding very considerably beyond the general contour of the body. The pygidium is still turned forward and consequently conceals the oil-gland. The skin is still very loose and much wrinkled, but the feathers have pushed their way out in certain areas, now to be described *:—

Pteryla capitis covers the top, back, and sides of the head, and runs for a short distance down the back of the

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* In Plates VIII., IX., & X. only those feathers which have actually made their appearance are drawn; the feather-papillæ are disregarded.

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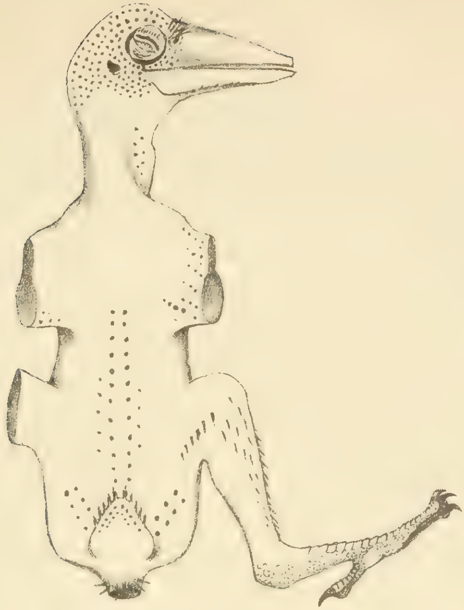

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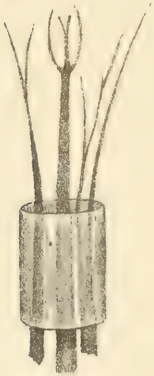

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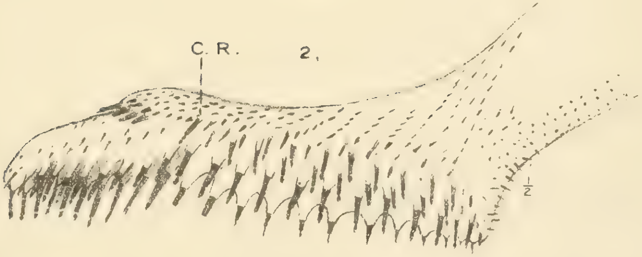

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HORNBILL EMBRYOS AND NESTLINGS

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neck. The skin between the rami of the mandibles is devoid of feathers, save for a few bordering bristles. The eyelids are provided with eyelashes, those of the upper lid being the more strongly developed; they have the same structure as the rictal bristles (*cf.* Pl. IX. fig. 1 *a*), but are singly disposed, not arranged in groups. These filoplumes are either fine single bristles, or double, or else terminate in a somewhat trident-like fashion.

Pt. colli.—Of this future well-developed and solid tract very little can yet be seen, neither the *pt. spinalis* nor the *pt. ventralis* having absolutely established their connection with the *pt. capitis.* Ventrally a few minute tips can be seen on the lower part of the neck; laterally not even feather-papillæ can be distinguished.

Pt. spinalis.—The feathers forming this tract are not far advanced, none being actually visible above the middle of the back. The tract quickly broadens out, then narrows again, and finally spreads over the pygidium to fuse with the coverts of the rectrices. A short narrow branch is sent up on each side towards the *pt. femoralis,* from near the termination of the *pt. spinalis.*

Pt. ventralis commences at the base of the neck; its connection with the *pt. colli* is, however, not yet established. Almost immediately the tract forks, the branches running down as far as the lower edge of the sternum. The lower feathers are white. I will here just notice a short tract which runs from the proximal third of the humerus, downward towards the *pt. ventralis.* I shall have more to say concerning this later on.

Pt. humeralis.—Continuous with the *pt. alaris.*

Pt. ani.—A ring of feathers surrounding the prominent anus.

Pt. femoralis.—A few, but well-developed, feathers running into a strong *Pt. cruralis*, the feathers of which are white.

Pt. uropygii.—The oil-gland is densely tufted.

Pt. alaris.—(Pl. IX. fig. 2.)

Metacarpo-digitals.—The tips of the 2nd to the 11th have appeared, as is the case with the cubitals; the tip of the 1st metacarpo-digital has not yet pushed through, and, as there is no carpal diastema, this feather looks as if it belonged to the cubital series. Nos. 3, 4, & 5 are the longest.

Cubitals.—Thirteen can be distinguished; they decrease in size proximally. Only the sheaths of Nos. 1 to 7 have appeared, while of Nos. 8–13 not even these are to be seen.

Tectrices:—

T. majores.—Well developed on the dorsal surface; on the manus there are none ventrally, on the cubitus 12 weak feathers.

T. mediæ.—Nos. 1 & 2 (dorsal) are absent on the manus, while ventrally 9, 10, and 11 only occur. On the cubitus they are well developed dorsally, but ventrally are absent.

T. minores.—On the manus dorsally one row (Nos. 4–11), ventrally only one is present (No. 2). On the cubitus the series begins with two rows and proximally widens out to five, the second, third, fourth, and fifth rows terminating abruptly and leaving a bald patch just above the elbow. On the ventral surface there are none.

T. marginales.—On the manus there are two rows on the dorsal, and two on the ventral surface, one row of each series being on the pre-axial border. On the cubitus, dorsally, the series begins with eight or nine rows: at one point they do not reach the pre-axial border of the patagium; ventrally there are three rows.

Parapteron is singularly well marked; it is continuous with the *T. majores mediæ* and *minores.*

Hypopteron.—Non-existent.

A *carpal remex* is present.

Ala spuria with all the coverts well developed and continuous with the coverts of the cubitus.

Pt. caudalis.—Rectrices with the dorsal and ventral coverts developed.

The foot has now assumed the definitive shape, the toes being proportionally larger, the planta broader, and the heel less prominent. The ventral scutes have not yet appeared.

Dimensions.—Total length (from tip of beak to base of

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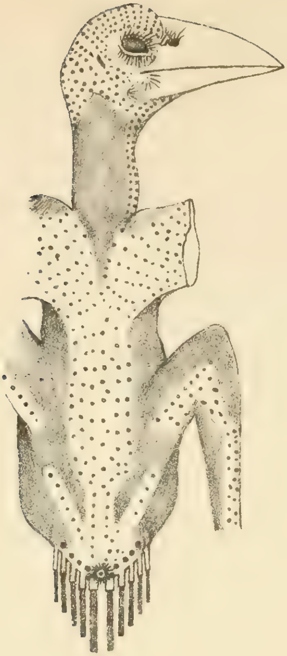

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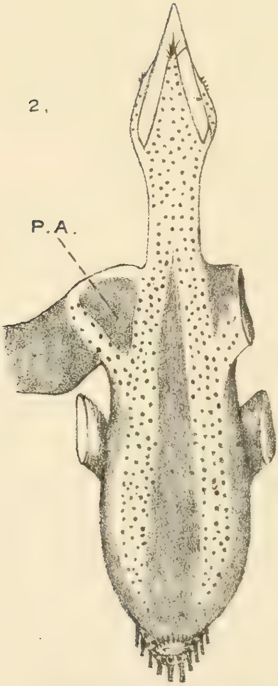

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HORNBILL EMBRYOS AND NESTLINGS.

pygidium) 386; upper mandible 61; lower mandible 72; antebrachium 74; manus 57; tibia 98; tarso-metatarsus 68; hallux 21; 3rd digit 35.

Stage 5.—Two advanced young of *Anthracoceros malayanus.* (Plate X.)

These two young birds have so nearly assumed the general appearance of the adult that I have but little to remark. The upper mandible is very deep, if measured across the nostril, which is much further from the culmen than in *Buceros rhinoceros.* The pygidium is turned downward, and the mouth of the cloaca is still very prominent. The foot is exactly the same as in the adult: that is to say the ventral scutes have appeared, one line of granular scales separating them from the dorsal series.

The pterylosis is interesting, inasmuch as not even yet have all the feathers appeared through the skin.

Pteryla capitis.—This is very much as in Stage 4, though the feathers are naturally much longer. The posterior half of the eye and the base of the mandible are naked.

Pt. colli.—The back and sides of the neck are still quite naked, but ventrally the tract is very well developed, occupying the whole of the space between the rami of the mandibles and running into the *pt. ventralis.* This very late appearance of the lateral and ventral parts of the *pt. colli* is interesting as being possibly evidence of a former but now obsolete arrangement. In the adult the feathers on these parts are small and ill-developed, while in *Rhinoplax vigil* the whole neck is quite bare ('Dictionary of Birds,' Newton & Gadow, p. 434); whether or not this latter arrangement is the more primitive it is not easy to say.

Pt. spinalis.—The apterium of the neck extends down the back as far as a point between the shoulders; a very small apterium in the adult persists at this point. The *pt. spinalis* is perfectly continuous with the *pt. humeralis,* no apterium separating them; shortly before reaching the pygidium the tract narrows down to a row of two feathers deep, and then spreads over the pygidium, fusing with the coverts of the rectrices. The two upwardly-diverging tracts noticed in Stage 4 are present here also; in the adult they join the *pt. femoralis*.

Pt. humeralis.—Dorsally it is continuous with the *pt. alaris* and *pt. spinalis*; in the adult it runs over on to the ventral surface to fuse with the *pt. ventralis*; but at present this connection is not yet set up.

Pt. ventralis is in two halves, perfectly separate from each other; the *pt. colli*, forking just before its termination, runs into each half. A great increase in the length of the two ventral branches may be noted when this stage is compared with Stage 4. At the level of the knee (with the leg drawn up) each branch of the ventral tract sends upward and outward towards the proximal end of the humerus a sparse and narrow tract, the commencement of which was just indicated in Stage 4. In the adult these two narrow tracts sweep round over the point of the shoulder to join the *pt. humeralis* and *pt. ventralis* at the point of fusion of those two tracts; an oval island-like apterium is consequently left, which apterium I propose to call the *apterium pectorale*; though not completely formed at Stage 5, I have in Pl. X. fig. 1 indicated its future outline by a line.

Pt. alaris.—Save that the under coverts are no further developed than in Stage 4, the wing has assumed the adult appearance, and the birds must be quite capable of flying for short distances.

The other pterylæ call for no special notice.

General Summary.

The nestlings of the Bucerotidæ here examined are so highly specialized, no doubt as a result of the extraordinary habits of nidification, that a study of their external characters has not proved of any taxonomic value, though possibly the nestlings of the Upupidæ and Irrisoridæ might exhibit characters which would help to bridge over the gap between these families and their allies, the Hornbills.

The large dorsal apterium of the Upupidæ is in the adult Hornbill represented only by a minute apterium between the shoulders, and though its extent is considerably greater in the nestling of *Anthracoceros malayanus* (Stage 5), it is there correlated with an almost entirely naked neck, an arrangement which I am inclined to think primitive. The long *apt. coll. ventr.* of the Upupidæ is represented by a short expanse above the junction of neck and body in the young of *A. malayanus*; but the branching of the ventral pteryla in the Upupidæ is in all Hornbills quite unparalleled; for, as shown on p. 543 and p. 546, the branch of the ventral tract which outwardly bounds the *apt. pectorale* arises from a point low down on the tract to run upward, while in the Upupidæ it arises at the upper extremity to run downward. The junction of the *pt. humeralis* and *pt. femoralis* with the dorsal tract is also quite opposed to the arrangement in the Upupidæ.

The Nesting-habits, &c., of Buceros rhinoceros.

By C. Hose.

The nest is always built in the hollow of a large tree—the hollow, be it noted, being always due to disease of the tree or to the ravages of termites, not to the personal labours of the birds. The bottom of this cavity is often plugged by a termite-nest and accumulation of decayed wood, and on the upper surface of this is made the nest, a very rough-and-ready structure, composed simply of the feathers of the female. The hollow of the tree communicates with the exterior air by means of a long aperture, which, just before the period of incubation, is closed up almost entirely by the male, simply leaving a long open slit, up and down which the beak of the enclosed female can move. The substance used in thus closing the aperture closely resembles some vegetable resin, and is probably composed of a gastric secretion combined with the woody fragments of fruit. It should be noted that this slit is always in close proximity to the nest, so that the female can easily protrude her beak for food without moving from her sitting position. During incubation the male bird supplies the female with food in the form of pellets of fruit, seeds, insects, portions of reptiles,

&c., the pellets being enclosed each in a skin of rubber-like consistency. While feeding the female, the male clings to the bark of the tree, or sits on a branch if conveniently near, and jerks these pellets into the gaping beak of the hen, two to four pellets forming a meal. During mastication (for it is a mistake to suppose that the Hornbills always bolt their food entire) some fragments of the pellet fall to the ground; any seeds which these fragments may contain take root, germinate, and sprout, and the natives can approximately judge of the date of incubation by the age of the seedlings. When these are four-leaved, the eggs have been hatched out for two or three weeks. At this stage, though not always so early, the mother-bird leaves the nest, breaking down the gluey substance with her beak to effect an exit; having left the nest, the aperture through which she left is carefully closed up again, leaving the slit as before, and now both male and female devote their energies to feeding the young birds, who in course of time follow the example of their mother and leave their place of imprisonment. It is more than probable that this gluing up first of the mother-bird and her eggs and afterwards of the nestlings alone is solely a means of protection against predaceous carnivora (*Paradoxurus, Hemigale, Arctogale, Arctictis*, &c.); the fact that I have shot a specimen of *Hemigale hardwickei* in close proximity to a Hornbill's nest lends support to this view. One, two, or three eggs are laid: the egg of *B. rhinoceros* is white closely mottled with brown, giving a pepper-and-salt appearance; that of *Anthracoceros malayanus* is white, a specimen in my possession measuring 47 mm. × 32 mm. The nesting-season is during May and June, and it is noteworthy that the birds, if undisturbed, return to the same nesting-place every year. The saplings at the foot of the tree, sprung from seeds dropped in the first year of pairing, afford signs to the natives of the number of years during which the tree has been occupied. If during pairing or incubation the female, or female and young, are destroyed, the male takes to himself another mate and repairs to the same nesting-place; if, however, the male and female are destroyed, the nest is never re-occupied by other pairs. An interesting incident was observed while on Mount Dulit. Espying on a tree the external signs of a Hornbill's nest, and a male *Buceros rhinoceros* perched close by, I shot the male, and while waiting for my Dyak collectors to make a ladder up the tree to secure the female, I observed several young male birds fly to the nest and assiduously ply the bereaved widow with food, a fact which seems to indicate a competition in the matrimonial market of the bird-world as severe as that among human beings. It is no easy matter to procure embryos or nestlings of Hornbills, for the natives are inordinately fond of both as articles of diet, and, further, are always anxious to secure the tail-feathers of the adults to adorn their war-coats and hats. The native method of catching the female during incubation is ingenious, though decidedly brutal. The tree is scaled, the resin-like substance is broken away, and the frightened bird flies from her nest up the hollow trunk of the tree, but is ignominiously brought down by means of a thorny stick (the thorns pointed downward), which is thrust after her and twisted about until a firm grip in her plumage and flesh is obtained. The Dyaks, never very faithful observers of nature, believe that the female is shut up by the male so that, after hatching out her eggs, she may die, the maggots in her putrefying body affording food for the young. One very curious habit of *Buceros rhinoceros,* which I have not hitherto seen noted, is the rapid jumping up and down on a branch with both feet together. This jumping motion is imitated by the Kyans and Dyaks in their dances, the figure being known to the Kyans as "wan blingong."

XLVI.—*An Ornithological Expedition to the Zambesi River.*

By Boyd Alexander, F.Z.S.

(Plate XI.)

With the intention of investigating thoroughly the ornithology of the Zambesi region, we set out from Chindi on July 18, 1898, in one of the river steamers, which was to convey us as far as Tete. Owing to an exceptionally dry season our progress was painfully slow, since the course of the stream had become complicated through sandbanks, upon which our boat continually stuck ; but stoppages at various stations along the river to take in wood were delays which facilitated our collecting. On August 9, Tete was reached, whence we left for Mesanangue, a little village some 70 miles higher up the river, the furthest point our steamer could reach owing to the impassable Kabrabassa rapids. Here, accordingly, we disembarked, and prepared to trek to Chicowa, distant about 72 miles, whence we would once more have a clear reach of river for our own small boats, which we had brought out from England, and were capable of being carried in sections. From the difficulty of obtaining porters, we stayed at Mesanangue longer than we expected, but it allowed us to form the nucleus of a collection upon which we based our future work. With the help of beads and good calico we at length succeeded in getting our carriers, and we reached Chicowa on September 3, after a four days' trek over a rough country.

At Chicowa we found ourselves once more on the trade route to the north, while during our encampment several white traders passed through in quest of ivory and cattle.

On October 16, I and Mr. Ramm, my taxidermist, started by river to Zumbo. Our boat was manned by native paddlers, who were extremely good at their work, accomplishing on an average 15 miles a day, and then stopping towards nightfall to camp on some convenient sandbank, where each man cooked his 1 lb. of Kaffir meal, the only food he had in the day. Trained from childhood to paddle in canoes, these men are adepts at the work, and as they sit paddling on each gunwale of the boat, they break out now and again into chants at the signal of a long "whoo-hoop" from the captain of the crew, who stands at the helm. These boating-songs are by no means unmusical, while all seem to know them, since they are handed down from father to son, and a further charm is added to them by the accompaniment of the paddles striking the water with even measure. By means of these paddlers we reached Zumbo on November 4, having collected in different localities during the journey. Zumbo is the last place in Portuguese East Africa, and just beyond it, at the point where the Loangue river falls into the Zambesi, a line drawn true north and south determines the boundary of British and Portuguese territory. Zumbo is a military station, consisting of a commandant and a company of native soldiers. A few white-walled houses of brick close to the river belong to the Portuguese inhabitants, while on the rising ground behind is the extensive native village, whose straw-built huts bear a striking contrast to the dwellings of the white people.

With a fresh crew of paddlers, we left for the mouth of the Kafue river, in lat. 16° south, up which we journeyed for five days, and were then stopped by impassable rapids, the water converging into a narrow rocky defile and falling from a height of 15 to 20 feet. Lack of means and the near approach of the rainy season prevented the negotiation of these rapids, so we started for the coast the same way as we had come, bringing with us a collection of 914 bird-skins, which included 212 species. Both when going up the river and returning, the Portuguese commandants, especially at Chishomba, just above Chicowa, showed us much kindness, while many of the native chiefs on our route presented us with fowls, eggs, and meal.

The natives of Mashakolumbwe-land, through which the Kafue river flows (or the Kafukwe river, as it is known by the natives), showed us no hospitality, leaving us severely alone. They are not a nice race, for treachery lies at the back of their characters. Their features are clearer cut than those of the Zambesi natives, and they dress their hair in a peculiar manner, into the shape of a hayrick, dyeing it with a red chalk which they get out of the ground.

The Kafue, as far as we went, is a magnificent river, with deep water and clean-cut banks clothed with wood, while the stream never flows more than two miles an hour, very different from the current of the Zambesi, which runs in places from eight to nine miles an hour. Where the Zambesi passes through flat low-lying country, great stretches of reed-beds meet the eye, and these become thicker and more extensive where a dried-up watercourse makes a river in the wet season; while a watercourse like this becomes a kind of highway for many forms of animal life both going to and coming from the water. The spoor of the leopard is there, and near the edge of a pool a fresh imprint of a lion's as recent as the night before, while in other places the sandy mud is pitted by the great hoof of the hippopotamus, and besides all these there are hosts of other spoors, down to those of small antelopes, mixed up in thick confusion. And signs of bird-life are also not absent. There, on a piece of muddy sand, is a single imprint of a Heron which has chosen to stand on one leg, while stray feathers and the footmarks of Guinea-fowls mark the course of the flock towards the water. Towards sundown the hippopotamus leaves the deep water of the river, and makes for some nightly feeding-ground off the dried-up watercourse. As he moves along, hollow grunts strike the ear whenever he raises his bumpy forehead above water, the next moment to disappear with a snort like a violent sneeze from a horse, and just as dusk is closing in the stillness is broken by the sound of water rushing off his broad back as he emerges from the stream. Then, in the gloom, a great form is visible: the animal has raised himself, and for a moment sits on his haunches and, with a huge yawn, opens a gigantic mouth, looks sleepily from side to side, and then plods slowly off to the feeding-ground. When corn is growing up the hippopotamus does a good deal of damage, but the natives, in order to preserve their crops, have only to hedge in their plantations by the riverside with a low slender fence of fish-cane that a cat could knock over; yet it is quite enough to turn a hippopotamus, which rubs its nose against the obstacle, and, thinking it serious, wanders elsewhere.

In places, especially below Tete, the river sometimes attains three miles in width, but the view across is often interrupted by stretches of sandbanks, by small circular islets, and these are covered with tall reeds and fish-cane which struggle for foothold, pushing into the water the smaller reed-growth, whose tender green blades are for ever streaming like pennons upon the swift swirling current. And in the neighbouring reed-beds and thick clumps of bushes that surround snug pools of water all the bird-life seems to congregate. The babbling *Cossypha heuglini* pours out his mellow notes from the thickest portion, but seldom lets his presence be seen, and then from time to time the handsome large Yellow Weaver (*Xanthophilus xanthops*) flashes past to complete the nest which hangs from some slender bough, and disappears up the narrow network tunnel of the half-finished home. At the noise of a breaking twig, the warning notes followed by the repeated clear-drawn whistles of the Black-and-white Bush-Shrike (*Laniarius mosambicus*) will cause a pair of Bulbuls (*Pycnonotus layardi*) to set up their noisy cries, and these are soon backed up by the clapping wings of Pigeons. As evening comes on, many Doves come down to the pools for their last drink, and among them may be noticed the elegant little Long-tailed Dove (*Œna capensis*). Then among the fish-cane are hosts of Weavers making great chatterings, while more cautious still is the Waterhen (*Limnocorax niger*), whose dark body catches the eye as the bird threads its way through the grass before venturing out into the open to tread the soft carpet of weed on the water. And from time to time little "strings" of Estreldas hasten to their roosting-places before night overtakes them.

Crocodiles are numerous in the river, and during the year quite a number of natives, especially women, become their prey. When we were at Zumbo, a woman with a child on her back was taken while she was washing at the river. All that night our sleep was disturbed by feminine wailing, but the next morning other women, perfectly callous, were bathing at the same place, and not taking the slightest precautions against seizure by the crocodiles. An old crocodile which has once eaten human flesh becomes very bold and cunning. In the dry season the river in places leaves bare stretches of sand, and very often the women have a considerable distance to traverse from the village before they reach the water's edge to fetch water and do their washing.

The crocodile soon learns to know these spots and, watching his opportunity, journeys up the river for two or three hundred yards and then creeps out on to the sand, whose colour assimilates well with his body. In a very short time he has executed a détour and is behind his victim, and with one whisk of his powerful tail the woman is in the water and he after her. I once witnessed an example of this. A piercing cry made me turn my eyes in the direction whence it came, when I saw a woman struggling in the water and a crocodile just disappearing after her. The Portuguese commandant at Zumbo, to whom I mentioned the incident, said that the crocodile often resorts to the tactics I have just described.

There is a considerable sameness about the Zambesi scenery, but now and again there are localities of great beauty. The Lupata gorge, below Tete, and the three lupatas above Zumbo, are good examples. At these places the river is deep and devoid of sandbanks, flowing swiftly through steep rocky hills, clothed up to their summits with trees, among which the giant baobabs with their stout arms stand out conspicuously. Beyond these lupatas or gorges the scenery again becomes ordinary, the hills recede into the background, leaving stretches of flat country dotted over with groves and clumps of tall acacia-trees, while a "chia," or native village, with its kraals of mud walls and straw roofs, standing in the midst of marpela-fields, frequently meets the eye. On the rocky volcanic hills and stony soil the woods are composed of *Copaifera mopane*, whose leaves turn a russet-red in autumn and a beautiful tender green in spring. These woods are extremely monotonous and silent, and one may go for several miles without seeing any sign of bird-life, and then suddenly come across a party of birds —Finches, Flycatchers, Shrikes, and Tits, all congregated together and threading their way through the woodland, appearing just as if one had accidentally struck one of their highways to some favourite locality.

Beyond Zumbo the soil becomes less stony and richer, consequently the woods are thick and in many places become dense forest.

1. Pitta angolensis* (Vieill.).

A most difficult bird to observe. Only once did we catch a glimpse of the brownish-green back of an individual disappearing into a thicket. Frequenting the thick woods, especially where the soil is stony, and never taking to flight, this Pitta tantalizes the listener by giving out its song—if it can be so called—of four mellow notes, rapidly uttered as it runs along the ground, sounding at times ventriloquial in expression, and which might be likened to the syllables "lop, lop, lop, pleeup," often repeated. This song is commenced on the approach of the breeding-season, and during that period it is uttered fitfully throughout the day, when it is very often the only bird-voice to be heard in the woods. Just before the threatening of a storm, the bird becomes peculiarly persistent in its song. We first heard this Pitta at Zumbo on November 8, and continued to notice it up to the middle of January, when it became once more silent. Probably it had then commenced to breed.

2. Cinnyris cupreus (Shaw).

This Sun-bird is very partial to localities near the river where patches of flowering weed grow, from which it is with difficulty driven away, always returning to the same spot after a short circuitous flight even more jerky and erratic than that of *C. gutturalis*, a bird which is often found in its company. It was close to the mouth of the Shiré river, where we landed on July 21 for our midday meal, that we observed this species frequenting a strip of red-flowering plant close to a cluster of native huts. After chasing the birds to and fro for some time, they got to know our tactics and became very cunning, dropping down at our approach into the bottom of the weed, where they crept about like mice. Towards evening they resorted to a belt of fish-cane, through which they threaded their way after the manner of Estreldas.

Our four specimens were moulting, and two of them were young males in the plumage of the adult female.

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* I have mainly adopted the nomenclature in Capt. Shelley's 'Birds of Africa.' The measurements &c. given were taken in the field.

3. Cinnyris shelleyi, sp. nov. (Plate XI.)

Adult male. Entire head, neck, back, and lesser wing-coverts metallic green, with a slight golden gloss on the back of the head and neck and on the mantle; wings and tail black. At the base of the metallic-green throat is a narrow steel-blue collar, followed by a broad bright scarlet pectoral band, the feathers of which are partially barred with steel-blue, remainder of the underparts blackish brown. Bill black; iris dark brown; legs and feet black. Total length (measured in flesh) 4·65 inches, culmen 0·85, wing 2·5, tail 1·7, tarsus 0·65.

Adult female. Similar in plumage to that of *C. mariquensis*, but more yellow and less mottled with dusky on the underparts. Total length (measured in flesh) 4·56 inches, culmen 0·85, wing 2·4, tail 1·7, tarsus 0·65.

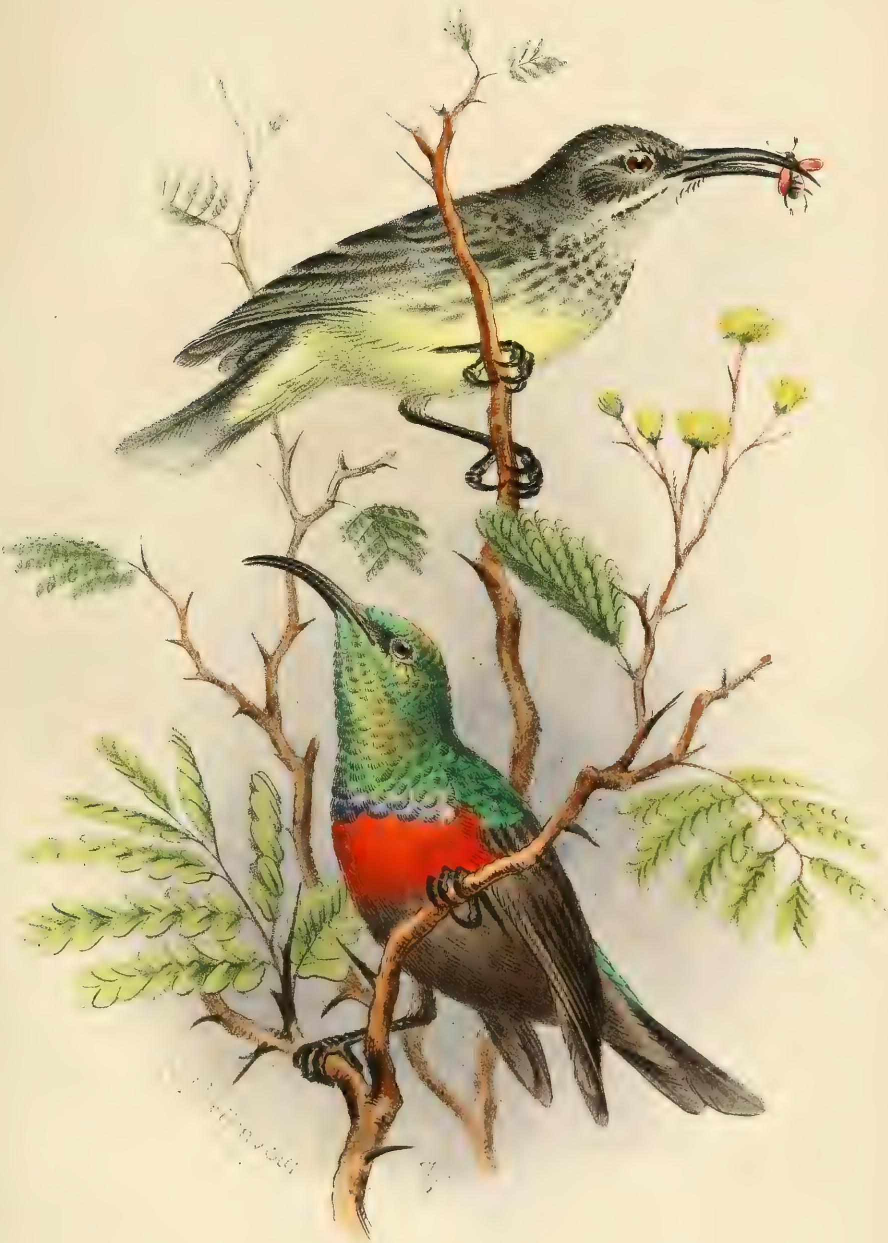
This species is nearly allied to *C. bifasciatus*, which it resembles in size, but it differs in having the bastard primary smaller and more pointed, in this character resembling *C. mariquensis*.

The most marked specific characters of *C. shelleyi* are—the pectoral band of sealing-wax red, which is similar to that of *C. erythroceria*, and the blackish-brown breast, which resembles that of *C. bouvieri*. The golden gloss on the upper parts is also much less than in *C. mariquensis*. The position, therefore, of this new Sun-bird is intermediate between *C. erythroceria* and *C. mariquensis*.

We discovered this species about 60 miles below where the Kafue river falls into the Zambesi. Both birds of the pair are adults in full breeding-plumage, and were shot in the latter part of December, being at the time in company with a number of *Chalcomitra gutturalis*, and, like that species, were busy in extracting the nectar from the acacia-blossoms. The note of the male was a small flute-like whistle.

4. Cinnyris microrhynchus Shelley.

The most southern known locality for this species before we obtained our specimens was Songue, in Nyasaland, where Mr. Alexander Whyte procured an adult male in full breeding-plumage in June. During our stay at Zumbo, on



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CINNYRIS SHELLEYI

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NEW YORK.
OF NATURAL HISTORY

the Zambesi, considerable numbers of these Sun-birds suddenly appeared on December 13, among the acacia-growth then in full blossom. We collected seven specimens, one adult female and six males, two of which were moulting, while the remaining four were in dull plumage with upper parts similar to those of the adult female, chin and throat brownish black, underparts yellowish mottled with brown. The process of moult in the other two birds goes to show, in our opinion, that they are discarding the breeding-dress for this dull plumage just described. According to Mr. Alexander Whyte, they breed about June in Nyasaland, and therefore by the end of December breeding would have finished, and the adult males would then have assumed, or nearly so, a dull plumage, for these dull-plumaged males we obtained were certainly adults and not birds of the year, in fact, according to our note-book, "the sexual organs were too much developed to be those of immature birds."

	Total length (measured in flesh).	Culmen.	Wing.	Tail.
	in.	in.	in.	in.
Adult ♂ (moulting)	4·25	0·062	2·2	1·56
„ (dull plumage)	4·23	0·061	2·1	1·55
Adult ♀	3·6	0·059	1·8	1·35

5. CINNYRIS LEUCOGASTER Vieill.

With the exception of *Chalcomitra gutturalis*, this species was the most abundant of the Sun-birds along the river, but at the same time its distribution was local. Wherever the thick woods gave way to open spots interspersed with acacia-bushes these little Sun-birds mustered in considerable numbers, full of activity, hardly heeding one's approach, but devoting all their attention to the acacia-blossoms. After emerging from a silent and gloomy forest, it was a relief to come to such a spot, looking like a glimpse of fairyland itself: the bright light playing upon the tender green of the acacias, starred with innumerable feathery blossoms, among which the Sun-birds were revelling, the sunlight catching the peacock-blue of their backs as they travelled with jerky dancing flight from one bush to another; while from time to time they would burst out into chattering little songs, whose notes closely resembled those of the Siskin, and these now and again giving place to the call-note—a plaintive whistle.

All the males we obtained near Tete in August and at Zumbo in December were in full breeding-plumage, the sexual organs being largely developed. The feathers of the foreheads and chins of many were literally steeped in the yellow powder of the acacia-flower. The male sex appears to predominate to a large extent in this species.

Capt. Shelley records the range of this Sun-bird as follows :—" From the Quanga and Zambesi rivers southward into Damaraland and Natal."

6. Cinnyris venustus (Shaw).

Our two specimens agree with typical *C. venustus* both in measurements and coloration of plumage. Typical specimens in the British Museum have the following measurements :—

	Wing. in.	Culmen. in.	Tail. in.
Adult ♂, Cape Verde	1·9	0·06	1·53
,, ,,	2·0	0·06	1·4
,, River Gambia	1·92	0·06	1·3
Our birds measure :—			
Adult ♂, Zumbo	1·89	0·06	1·3
,, ,,	1·85	0·06	1·32

According to Professor Bocage, Anchieta found this species in Benguela, and now it appears we have increased its range as far eastward as Zumbo, on the Zambesi, while it is quite probable that it will be found to unite with its closely-allied form, *C. falkensteini*, in North-eastern Africa. In *C. falkensteini* the measurements are larger and the bill considerably stronger :—

	Wing. in.	Culmen. in.	Tail. in.
Adult ♂, Kilimanjaro	2·2	0·7	1·7
,, Zomba, Nyasaland.	2·18	0·7	1·75

7. Chalcomitra gutturalis (Linn.).

We first met with this species near the mouth of the Shiré river on July 31. A strip of tall orange-red flowering plants, not far from the river, attracted a great number of these birds, as well as large flocks of Weavers (*Pyromelana sundevalli*). We found it easy to obtain our specimens; in fact it was difficult to drive the birds away from this clump of flowering weed, while from time to time they took refuge in neighbouring thick-leaved trees. The flight is jerky and erratic, and the note, often uttered on the wing, is loud for the size of the bird, resembling a rapid rendering of the Greenfinch's call. These Sun-birds lived in colonies along the river; their distribution, however, depended to a great extent upon flowering plants, and especially acacias, of whose blossoms they were extremely fond. Their distribution was decidedly local, and from the time we left the locality of one colony till we came across another hardly an individual was observed.

Regarding their habits, they are seldom found very far away from water; in fact, more than once we observed a party hovering to and fro over the river itself, catching insects. When not breeding, the males generally travel from one spot to another without the company of the females. During the heat of the day, when all other birds have hidden themselves away in the cool depths of the wood, they are abroad, seeming to take a delight in the intense heat, and it is only in the early morning and evening that they retire into the thick under-cover. As the pairing-season approaches, the male never leaves the side of his mate, and, when courting her, has a quaint way of swaying his body from side to side, as if on a pivot, right in front of her. Moreover, he is constantly uttering his song from the topmost twig of some tall acacia-tree, the notes, both in tone and rendering, being by no means unpleasant, and closely resembling those of the Lesser Redpoll. When feeding on the buds of a tree, this Sun-bird generally attacks them from some convenient branch above, to which it hangs all the time by its feet, or it will give a great stretch forward in order to bring a bud within its reach.

Above Zumbo, near the river, we discovered a nest on December 21. It was oval-shaped, and attached to three slender branches of an acacia-tree, about 20 feet up. The structure was flimsy and untidy, composed of fine grass interwoven with fragments of skeleton-leaves, cobwebs, and cocoons, and lined with the fluffy down of some weed. The depth of the nest was 3 inches, the circular entrance being about an inch from the top, the hole running perpendicularly down. Not a yard away from it was a nest of bees; and we noticed that the pair of Sun-birds constantly made use of these bees as guides to some rich flower-store in the vicinity, the male frequently following the course of the bees, and more than once attacking a returning bee and carrying it off. After we obtained the female, the male bird became very shy, only to appear now and again above the high trees in the vicinity.

The last locality where this species was observed in any great numbers was some 60 miles below the mouth of the Kafue river, which we reached on December 31. The land was low-lying and covered with groves of tall acacia-trees. The birds were revelling among the freshly-opened blossoms. About the middle of December, the commencement of the rainy season in the Zambesi region, they begin to breed, and by the time the young are hatched the store of insect- and flower-life is abundant. At other times of the year partial migrations of this species occur, the birds following in the wake of rain-clouds. On several occasions we observed, after a local shower, the particular locality was invaded soon after by companies of these birds.

All the male specimens, six in number, we obtained on July 31 were in full breeding-dress. Further up the river, at Zumbo, on November 10 and 13, and again on December 16, we collected for the first time five immature males, which had only assumed the plumage of the adult as far as the chin, throat, fore-neck, and chest.

On examining our series and the dates on which the specimens were obtained, it would appear that the full plumage of the adult is not assumed till the second year. The plumages of our immature males are perfect in their way, showing no signs of a direct transitional change.

Capt. Shelley records the following range for this Sun-bird:—"From Angola into Damaraland, and from thence throughout Eastern Africa from Natal to 1° N. lat. on the Somali coast."

8. CHALCOMITRA KIRKI (Shelley).

By no means abundant. We never met with any fully adult birds, obtaining our two immature males with the metallic-coloured throats of the adult on November 12 at Zumbo, and subsequently two females as we journeyed up the river.

The southernmost range of Kirk's Amethyst Sun-bird is the Limpopo river. It appears to be the north-eastern representative of *Chalcomitra amethystina* (Shaw), from which it differs in being slightly smaller and in possessing no metallic colour on the upper tail-coverts.

9. ELÆOCERTHIA FISCHERI Reichenow.

Decidedly scarce. Our only specimen was obtained on August 1, in a grove of tall trees at the little village of Umquasi, on the left bank of the river, and about 60 miles below Tete. The bird was extremely shy, flitting from one tall tree-top to another, and never descending to the undergrowth of acacia-bushes, which was frequented by numbers of *Chalcomitra gutturalis.* The range of this species appears to be from the Zambesi river northward into Eastern Africa as far north as Manda Island. Both in measurements and plumage, *E. fischeri* runs the allied species, *E. verreauxi,* extremely close. The British Museum possesses two typical specimens of the former from Manda Island, while of the latter there is a good series of specimens collected in Natal and Zululand, and these vary considerably *inter se* as regards measurements. The slightly greyer upper parts and paler shade of the underparts appear to be the only characters that separate it from *E. verreauxi,* but it is doubtful whether these will remain constant when a larger series of both forms is forthcoming.

10. ANTHOTHREPTES HYPODILA (Jard.).

Our only specimen was obtained on July 30 near Tete, where the country is well wooded and impenetrable. It was an adult male in full breeding-plumage, and by the size of the organs it must have been breeding.

Adult ♂. Total length (measured in flesh) 3·9 inches, culmen 0·05, wing 2, tail 1·6. Iris black.

11. Parus niger Vieill.

Locally distributed, and found either in pairs or in small parties threading their way through the undergrowth. We procured a good series. The plumage of the males shot in August was very fresh, the feathers of the wings, under tail-coverts, and tail being conspicuously edged with white, while in those obtained near the Kafue river in January the white edgings, especially on the primaries, under tail-coverts, and tail, had almost disappeared.

Adult ♂ (Kafue river). Total length (measured in flesh) 6 inches, wing 3·25, tail 3·1. Iris black; legs and feet lead-colour.

Adult ♀. Total length (measured in flesh) 5·7 inches, wing 3, tail 2·94.

12. Parisoma plumbeum (Hartl.).

One specimen obtained, and in the vicinity of the Kafue river.

Adult ♀. Total length (measured in flesh) 5·5 inches, wing 2·62, tail 2·8. Iris hazel; legs and feet slate; upper mandible brownish black, lower horn-colour.

13. Motacilla vidua Sundev.

Common along the river. The male possesses a pretty song, which it gives out in a warbling fashion from the top of rocks skirting the river. This handsome Wagtail is a fearless bird. On one occasion we remember seeing an individual running to and fro on the back of a huge crocodile that lay basking on a sand-spit. On October 8 the young in their brown plumage were abroad, while the adults had commenced to moult.

14. Motacilla flava Linn.

Considerable numbers of immature birds put in an appearance for the first time at Zumbo on December 10.

15. Anthus rufulus Vieill.

This Pipit frequents waste pieces of land. In the pairing-season the male will now and again rise up into the air vertically to a height of about 40 feet, and give out notes similar to those of the Meadow-Pipit. It breeds towards the end of July.

16. Macronyx croceus (Vieill.).

A pair in breeding-dress obtained near Senna on February 8. They frequented a portion of flat ground, more or less overgrown with small bushes, and were by no means shy. The male bird kept perching on the tops of the bushes and uttering a pleasant song, after which he would suddenly shoot straight up into the air and alight once more a little further off.

Adult. Total length (measured in flesh) 8·1 inches, wing 3·8. Iris brown; upper mandible blackish brown, lower slate-colour; legs and feet flesh-colour.

17. Macronyx wintoni Sharpe.

An immature specimen obtained in long grass at Chicowa on September 4.

Immature ♀. Differing from the adult in having the upper parts paler and the feathers less broadly edged with rufous buff; fore-neck sandy brown, mottled with streaks of brownish black; throat whitish, tinged with sandy, with a few feathers becoming pink; centre of underparts light pink.

Length (measured in flesh) 7·5 inches, culmen 0·45, wing 3·54, tail 3·15. Iris brown; upper mandible brown, lower horn-colour; legs and feet brown.

18. Mirafra fischeri (Reichen.).

Not common, frequenting hilly woodland where the grass is long, or where it has lately been burnt. When flushed this Lark flies forward for a short distance, and then drops vertically to the ground again. Three specimens obtained.

Adult ♂ (Chicowa). Total length (measured in flesh) 6·2 inches, wing 3·12. Iris hazel; legs and feet flesh-colour.

19. Mirafra nigricans (Sundev.).

Two adult males and one female shot on December 26 out of a flock of three, which frequented open land where the trees had been felled by the natives and the ground sown with grain. The feathers of the mantles of these three individuals had almost lost their pale edgings.

Adult ♂. Iris hazel; legs and feet greenish white.

Locality. Zambesi river, left bank, near mouth of Kafue river.

This species ranges from the Transvaal into Benguela, but this is the first record of its occurrence to the north of the Zambesi in Central Africa.

20. Pyrrhulauda smithi Bp.

We collected a fine series of this Bunting-Lark from Tete, Zumbo, and the vicinity of the Kafue river. It frequents flat portions of stony ground. In the breeding-season the male sings on the wing, rising vertically up from the ground, and descending to earth again with hardly a beat of the wings. The call-note, uttered on the ground, is a ventriloquial pipe. Living in colonies, these birds are continually shifting from one locality to another, according to the supply of food. At Zumbo they suddenly appeared on December 13, when the grain had just been sown. The food consists chiefly of grass-seed.

Adult ♂. Iris black; bill bluish horn-colour; legs and feet whitish flesh-colour. Several of our specimens are immature males in the plumage of the adult female.

21. Emberiza flaviventris (Vieill.).

Inhabits high ground, and especially where the wood is composed of *Copaifera mopane*.

22. Fringillaria tahapisi (Smith).

Common where the ground is hilly and overgrown with long grass. Breeds about the middle of August.

Adult ♂. Iris brown; upper mandible brown, lower orange-yellow; legs and feet brown. Young males resemble in plumage the adult female.

23. Petronia flavigula (Sundev.).

Not common. A pair only obtained in woody country near the Kafue river. This Sparrow possesses a loud musical chirp.

Adult. Total length (measured in flesh) 5·9 inches, wing 3·5. Iris hazel; legs and feet slate; upper mandible brown, lower light horn-colour.

24. PASSER DIFFUSUS (Smith).

Common. Never observed in flocks, but scattered about singly and in pairs. Breeds in January during the rainy season.

Adult ♂. Iris brown; bill black; legs and feet brown. In old males the bill becomes black.

25. SERINUS ICTERUS (Bonn. et Vieill.).

Common along the Zambesi river, and found in small flocks.

26. HYPOCHERA NIGERRIMA Sharpe.

Moults in August.

27. HYPOCHERA AMAUROPTERA Sharpe.

A single specimen, an adult male, at Zumbo, January 17, 1899.

Total length (measured in flesh) 4·4 inches, wing 2·6. Iris black; legs, feet, and bill orange-red.

28. VIDUA PRINCIPALIS (Linn.).

Breeds in large colonies, suspending their nests from the topmost twigs of tall acacia-trees. They keep much to the waste plots of land near villages. The males have a laboured flight, as if they were weighed down by their long tails, which they commence to assume towards the end of October. In a flock the males predominate to a very large extent over the females.

29. VIDUA PARADISEA (Linn.).

Not nearly so common as the preceding species.

30. PENTHETRIA ARDENS (Bodd.).

One adult female at Zumbo, December 12, 1898.

31. PENTHETRIA MACRURA (Linn.).

An adult female, shot from a pair at Zumbo on January 18.

This is the southernmost locality yet recorded for this species, hitherto ranging from Senegambia to Angola across Equatorial Africa and the Lake countries.

32. Penthetria albonotata (Cass.).

We met with this Weaver at Zumbo on November 7, a small flock consisting entirely of males in full winter plumage. They frequented a stony bush-grown locality near the village, and hardly a day passed without our finding them in the same spot. It is a remarkable-looking Weaver, the bar of white on the wings as it takes to flight at once attracting attention. Beyond Zumbo, on December 24, we observed for the first time a small party of males in full breeding-dress. At first it was hard to realize that they belonged to the same species as those we had seen at Zumbo. For one thing, their habits seemed to have altogether changed, as, instead of pottering about among bushes and getting up almost at one's feet, they resorted to extensive marshy reed-beds and were as wild as Hawks, travelling with a strong flight and as straight as a die for a considerable distance before alighting upon the next group of reed-heads. Their presence in this black velvety plumage came to us all the more as a surprise, since from the time of leaving Zumbo we never came across any individuals in the transitional state, as in the cases of *Pyromelana flammiceps* and *P. sundevalli*. This struck us as remarkable, giving the idea that the males must retire and hide themselves away somewhere, to suddenly appear one fine morning in all their splendour of breeding-costume. Our six males in summer plumage vary considerably in measurements.

	Total length (measured in flesh).	Wing.	Tail.
	in.	in.	in.
Adult ♂	7·0	3·2	3·9
,, ...	6·5	3·0	3·5
,, ...	6·0	2·9	3·0

Iris brown; bill bluish horn-colour; legs and feet dark brown.

33. Pyromelana flammiceps (Swains.).

Not so common as *P. sundevalli*, from which they can be readily distinguished in flight by their larger size and blackish wings. The song of the male bird is peculiar—a running voluble "tiz," uttered from the depths of some reed-bed, being especially loud after rain.

34. Pyromelana sundevalli (Bp.).

This form appears to be well founded. It is the northern race of *P. oryx*, from which it differs in being smaller, the black on the head and throat more restricted, and the red on the breast more extended. Our birds, of which we have a fine series, agree in plumage and measurements with those in the British Museum obtained by Livingstone on the Zambesi, and also with two specimens from Mpindi, Upper Shiré river, which latter, in our opinion, should be referred to *P. sundevalli*, and not to *P. nigrifrons*.

P. sundevalli.

			Wing. in.	Culmen. in.
Adult ♂,	Zambesi river	(*Kirk*)	2·6	0·5
,,	,,	,, ...	2·5	0·5
,,	,,	(*Alexander*) ..	2·6	0·48
,,	,,	,, ..	2·62	0·5
,,	,,	,, ..	2·63	0·5
,,	Kafue river	,, ..	2·53	0·49

P. oryx.

		Wing. in.	Culmen. in.
Adult ♂,	Transvaal	3·1	0·6
,,	Natal	3·0	0·54
,,	Potchefstroom	3·2	0·6
,,	Bloemfontein	3·0	0·56
,,	Maritzburg	2·9	0·53
,,	Elands Post	2·86	0·59

The range of *P. sundevalli* should therefore be from Damaraland to Benguela and from the Zambesi to the Lake regions.

This is the most plentiful of all the Weavers, being common everywhere, and it appears to be equally at home among the huts of a native village, in reed-beds, or in thick woods. Throughout the greater portion of the year it is found in large flocks, whose proportions increase at times of feeding, in the morning and evening. With them safety lies in numbers, since they are constantly being preyed upon by Hawks (*Accipiter minullus*) and the Black-shouldered Kite (*Elanus cæruleus*) during the daytime, and the Red-legged Falcon (*Melierax gabar*) in the evening, when they resort to the reed-beds for the night. When a flock travels over a region where an attack is likely, a strong and rapid flight close to the ground is resorted to; but they do not always get off scot-free, for I have more than once seen a flock completely routed and one of their number borne away. In one locality the flocks are often considerable, and there is no better time to estimate their numbers than towards evening, when they journey to the reed-beds. An accustomed track is always taken; flock after flock will go "swishing" past in almost bewildering succession to some reed-bed ahead, into which they pitch like so many showers of bullets. Soon among the green cover of the fish-cane there will be hosts of Weavers making great chatterings, and when there is a pool close by they travel to the confines of the fish-cane and commence to drop down to the water to take their last drink for the night, a continuous string of birds circling down and up without interruption, like the endless chain on a wheel. It is a pretty sight. There is neither bickering nor quarrel, each bird has a chance to dip its beak into the water, and only when the last bird leaves the pool does the chattering or singing within the reed-bed cease. Then a confused rustling of innumerable wings takes place, telling the observer that these large flocks are retiring into the depths of the green cover for the night. From the winter-plumage to the brilliant summer-dress the change is slow, and during this period all stages of plumage may be observed, which impart to a flock a very mottled and curious appearance. By the end of January the males have completely assumed their remarkable breeding-dress, but their numbers are small compared with the females and the birds of the previous season, who still keep the brown plumage, and the flock that awhile back was nothing more than a study in brown becomes all glorious with the gorgeous liveries of the male birds. It is a sight worth seeing to behold a flock go past you, twisting and turning in the bright sunlight across the wide mealie-field, bristling with fresh green blades, then on to the dark-green cover of a reed-bed, whose lowest depths they penetrate and fill with a soft, confused chattering, for all the world like a fugue in monotone while now and again the males climb to the top of the tallest reeds, their look-out posts, and the setting sun glancing on their plumage seems to turn each reed-head into a brilliant ruby.

35. Quelea quelea (Linn.).

Locally distributed and found in large flocks frequenting the extensive beds of fish-cane near the river and making them resound with their singing, which is not unlike that of Starlings when together.

At the end of December the males were in full breeding-dress; while the plumage of the females had also undergone a change, the feathers of the upper parts having become darker, especially on the crown, the buffish-white edgings to the secondaries and feathers of the mantle having disappeared, the yellow edgings to the quills being more distinct, and the eye-stripe and the whole of the underparts being washed with a sandy buff.

36. Granatina angolensis (Linn.).

Common and generally seen in pairs. On January 17 we found a nest almost ready for eggs among the small branches of an acacia-bush, and about 15 feet up. It was loosely constructed of dried grass, and presented a somewhat untidy appearance.

37. Estrilda astrild (Linn.).

Plentiful. Very old males may be distinguished by the whole of the underparts being washed with rosy and the pink on the lower breast being brighter and more extended, while in young birds the underparts are lighter, especially about the face and throat, which are whitish. In immature males the iris is red and the feet are brownish black.

38. Estrilda subflava (Vieill.).

First met with at Senna, and found, in company with the former species, frequenting the small waste islands in the river that are overgrown with tall grass, from which it is difficult to drive them away. The chattering notes are by no means unpleasant, and are far more musical than those of *E. astrild.* In immature males the upper and under tail-coverts are the first to assume the adult coloration, followed by the feathers of the sides of the chest and flanks becoming barred.

Adult ♂. Iris red; legs and feet brown.

In young males the bill is black, while the iris is variable from a straw-colour to a brown.

39. Lagonosticta jamesoni Shelley.

The British Museum possesses two specimens of this species, an adult male and female from the Umvuli and Tatin rivers, Mashonaland, collected by Mr. Jameson. We found this bird by far the more scarce of the two Lagonostictas we met with.

Though observed on several occasions, especially at Zumbo, we only managed to obtain a single specimen near the Kafue river on January 12, out of a pair that frequented long grass close to the bank. In life they are easily to be distinguished from their close congener, *L. brunneiceps*, by their larger size and stouter tails, while they generally keep apart from the latter species and go in pairs.

Adult ♂. Total length (measured in flesh) 3·9 inches. Iris brown; bill dark bluish slate; legs and feet slate-colour.

40. Lagonosticta brunneiceps Sharpe.

Frequents waste places, overgrown with long grass, near the river. On August 16 we found a nest placed in a small bush close to the ground. The nest was domed, and composed of pieces of Indian corn-blades and lined with fine grass-bents and Guinea-fowl feathers. The eggs, three in number and much incubated, were white, and had average measurements of 5·8 × 4·6 inches.

In our series the adult males have the white spots on the sides of the breast well defined. An adult female shot on January 5 has these spots also clearly, and at the same time more numerously, marked; while two females obtained four months earlier, on September 6, do not possess any of these spots, and the crimson on the lores is less conspicuous. These breast-markings, therefore, appear to come with age. An immature male with a few feathers becoming crimson on the chin and forehead, obtained on August 10, resembles in plumage these two females.

41. Pytelia melba (Linn.).

Locally distributed, the male sex predominating. In September the young were abroad. On one occasion, September 8, we observed a pair of birds feeding four young ones perched in a row on a branch, and they were by no means shy, allowing of a close approach. The adults had then commenced to moult and were not in good plumage again till the middle of January. In the males the coloration of the plumage varies considerably in intensity. The scarlet of the rump and tail-feathers is very conspicuous in flight.

Adult ♂. Bill crimson; iris red; legs and feet light brown.

42. Hypargus niveiguttatus (Peters).

By no means common. A single specimen obtained near Tete.

43. Ploceipasser pectoralis (Peters).

Wherever the woods were composed of *Copaifera mopane* this species was numerous, distributing itself in colonies, each selecting a clump of trees, whose outside branches the birds festooned from top to bottom, generally on the lee side, with their nests. These "weaveries" were nearly always located near the confines of a village or close to a native path, their owners welcoming a passer-by with loud choruses of mellow musical chirps, which became long and boisterous on an important advent, such as a string of carriers passing by. These woods are very silent, few birds seem to care to haunt them, and but for these Weavers the monotonous silence would scarcely ever be broken. The same tree is resorted to year after year, and the old nests used as roosting-places when the breeding-season is over, and these undergo constant repairing. The nests, built in pendent branches and about 15 to 20 feet from the ground, are composed of fine dried grass like dry hay, and generally lined with Guinea-fowl feathers, in construction resembling those of our House-Sparrow, and are also about the same size, the entrances of all the nests in one colony always facing one way, in an outward direction. They are, as a rule, untidy-looking structures, no attempt at trimming being made, and remind one forcibly of hedgerows in England, past which haycarts have journeyed and left bunches of hay on the branches. In flight this bird looks much like some large Wheatear, its white rump being very conspicuous. During the breeding-season the male sings rather prettily, melodious whistles being introduced into the usual string of musical chirps.

Adult ♂. Bill black; iris claret-colour; legs and feet brown.

44. Anaplectes rubriceps (Sundev.).

A rather shy species, keeping much to the thick portions of the woods in little flocks of five or six birds, in which the male sex predominates to a very large extent. On nearly every occasion there were on an average four males to one female. The white flower of the baobab offers them a good deal of attraction, and it is a pretty sight to witness them attacking the pendent half-opened buds as they hang head downward from some branch above, the immaculate whiteness of the flowers bearing a striking contrast to their vermilion-feathered breasts. From this habit of suspending themselves from branches, the white feathers of the abdomen become very grimy-looking.

The amount of vermilion on the breasts of individuals varies considerably, while in many of our specimens the upper tail-coverts are washed with it as well as the feathers here and there on the abdomen and thighs.

Adult ♂. Total length (measured in flesh) 6·5 inches. Iris brown; bill light coral; legs and feet brown.

Adult ♀. Total length (measured in flesh) 5·5 inches. Iris brown; bill orange-red; legs and feet light brown.

In freshly-moulted females the white edgings to the secondaries are broad and conspicuous, but these disappear after a time through abrasion.

45. Hyphanturgus ocularius (Smith).

Not common. Observed either singly or in pairs. It commences to build about the middle of November, and the vicinity of water is always chosen. Attempts at concealing the nest are sometimes made by interweaving fragments of the surrounding leaf into the network of fibre.

Adult ♂. Total length (measured in flesh) 6·14 inches. Iris lemon-yellow; legs and feet slate.

Adult ♀. Total length (measured in flesh) 6·3 inches. Iris lemon-yellow; legs and feet slate.

46. Xanthophilus xanthopterus (Finsch & Hartl.).

We obtained two immature males on August 8 near the Shiré river, where Sir John Kirk obtained the type of the species.

Young. General colour above buffish brown, becoming nearly uniform on the rump and upper tail-coverts; feathers of mantle and back with dark centres; primary- and wing-coverts brown, edged with pale yellow; quills brown, with broad yellow bases on the inner webs, outer edges greenish yellow; tail-feathers greenish brown, edged with olive-yellow; crown of head and nape olive-green, with narrow dusky centres; cheeks, sides of head, and throat pale yellow, remainder of underparts white, washed with pale buffish brown, more distinct on the breast and flanks; under wing-coverts yellow; upper mandible black, the lower horn-colour; iris hazel; legs and feet brown.

In the immature bird the quills and tail-feathers appear to be the first to assume the adult state.

47. Xanthophilus xanthops (Hartl.).

We first met with this species at Chicowa, frequenting the shady portions of the river's bank in pairs and in company with Bulbuls (*Pycnonotus layardi*). As we journeyed further west they became more plentiful, and at the end of November building had commenced. The tunnelled nests were hung from pendent branches of thick bushes near running water, and were never in colonies like those of other Weavers, but each pair of birds had their own particular thicket. The song of the male is a loud running chatter, kept up without intermission for some seconds. The plumage of the immature male is similar to that of the adult female.

Adult ♂. Total length (measured in flesh) 7·5 inches, wing 3·54. Iris yellow; bill black; legs and feet brown.

Adult ♀. Total length (measured in flesh) 7 inches, wing 3·4. Iris lemon-yellow; upper mandible brownish horn, lower lighter.

48. Hyphantornis shelleyi Sharpe.

We found this Weaver breeding in considerable colonies in high trees at Zumbo towards the end of December. The adult females in the breeding-season have the entire under surface a rich yellow like the throat, while the immature females, with the exception of a few feathers becoming yellow, have the breast and abdomen white, similar to the adult females of *H. vitellinus*. In Cat. Brit. Mus. vol. xiii. p. 464, the inference made by Dr. Sharpe that "males in winter plumage have the entire under surface yellow like the throat, instead of the abdomen white," should therefore be referred to the adult female in breeding-plumage, and the description of his adult female to that of the immature bird. This change of plumage in the females of this species is identical with that of *H. nigriceps*, and the same is probably the case with the females of *H. cabanisi*.

During our stay at Zumbo we had a good opportunity of observing the breeding-habits of this Weaver. The males were continually at work building the nests, while the females hardly ever came near them, but were always abroad, each bird being in the company of another, so much so that they at first impressed us as being male and female till we procured specimens. It is quite possible that these Weavers are polygamous.

Adult ♂. Bill black; iris orange-red; legs and feet reddish brown.

Adult ♀. Bill brownish horn-colour; iris orange-yellow.

49. HYPHANTORNIS CABANISI Peters.

Adult ♂. Total length (measured in flesh) 5·2 inches. Iris lemon-yellow; legs and feet slate.

50. HYPHANTORNIS NIGRICEPS Layard.

The commonest of the Yellow Weavers, especially from Tete downward, consorting with other Weavers and Finches on waste land near the river. They breed in large colonies, hanging their nests to the fish-cane that fringes the water's edge. Such a spot presents an animated appearance in the breeding-season, these bright-coloured birds rushing backward and forward among the deep green reeds, intent upon their building operations, while the brown nests of the previous season present a notable contrast to those newly made, and are hardly distinguishable in colour from the reeds.

We obtained a fine series of this species in several stages of plumage. Like the adult females of *H. shelleyi,* the immature females become yellow on the underparts, while young males resemble in plumage the immature female.

Adult. Bill black; iris red; legs and feet brown.

In the immature birds the iris is hazel; upper mandible brown, lower light horn-colour.

51. ORIOLUS AURATUS Vieill.

Scattered individuals observed for the first time at Zumbo on December 12, frequenting the thick woods, and in company now and again with young birds. The adults were then in a moulting condition and were difficult to approach, their clear whistling note being more often heard.

52. Oriolus larvatus Licht.

This Oriole appears to be migratory in the Zambesi region. Only one individual observed near Senna on July 26. According to Mr. Marshall this species is also migratory in Mashonaland.

53. Lamprotornis mevesi (Wahlb.).

Found in small parties on low ground overgrown with brushwood, skirting the hills. By the middle of October these parties had split up into pairs and were then about the only birds to be seen during the heat of the day in the mealie-fields, preying upon locusts. The alarm-note is a harsh screech. I take the following observation from my note-book :—"While I write, three Long-tailed Starlings are sporting themselves on the bare dried-up ground close to my tent, busy picking up small grasshoppers. Their behaviour and gait remind me of our Blackbird : first a violent rush forward, then a sudden dip of the head to pick up some morsel, and then on again, the whole time their long tails being jerked up and down."

54. Lamprocolius sycobius (Licht.).

Inhabits different localities along the river from Tete onward in small flocks, in which the males predominate to a large extent over the females. A male obtained on October 19 had organs in breeding condition, while by the end of December large flocks both of old and young frequented the game country near the Kafue river, often being found in company with the preceding species and also *Amydrus morio*.

The males emit chattering notes, by no means unpleasant, which are uttered from the topmost twigs of tall trees. The call-note is a clear musical whistle.

55. Amydrus morio (Linn.).

Not common. Only three specimens obtained. When in flocks they are shy and fly at a considerable altitude. They breed about the middle of August, generally choosing holes in the baobab-trees for their nests, and to the selected trees the pairs resort both morning and evening some time before nesting commences. This Amydrus has a clear long-drawn note which it utters from the tops of trees. It is fond of the vicinity of running water, especially where there are patches of rocks in mid-stream, to which it resorts at regular intervals during the day, possibly for the purpose of feeding on small mollusks. The chestnut on the wings is very conspicuous in flight.

56. Dilophus caruncuLatus (Gm.).

During our stay at Chicowa a flock of young males visited pools of water in an extensive reed-bed near the river on September 4.

Immature ♂. Bill brownish horn; iris brown; soft parts greenish yellow; legs and feet brown.

57. Corvultur albicollis (Lath.).

By no means common, being observed in pairs. Unlike *Corvus scapulatus,* it is a resident about the Zambesi, while in whatever locality it was seen the latter species was absent. During our stay at Mesanangue in August, a pair continually visited a patch of rocks skirting the river, always coming from and going in the direction of some rocky hills, where no doubt they had a nest. At Zumbo, on November 13, we obtained an adult male out of a pair. It was in a moulting condition.

58. Corvus scapulatus Daud.

This species was seldom observed in pairs, but in large flocks, and appears to be migratory in the Zambesi region. When visiting Maramao, near Shupanga, on February 9, we disturbed a large number of these birds in a mealie-field. At our approach they all rose up with a great uproar, and circled in the air after the manner of Rooks.

59. Dicrurus afer (Licht.).

This Drongo is ubiquitous, especially on the lower reaches of the river. His presence becomes quite boring after a time, while he often succeeds in depriving the collector of a rare specimen by uttering his harsh notes of warning just at the critical moment. Marpela-fields in the vicinity of villages attract numbers of these birds, where they may be seen throughout the heat of the day perched on the dried-up marpela-stalks of the year before, from which they swoop upon locusts and other insects. This Drongo is quarrelsome and takes a delight in bullying smaller members of his fraternity, with the result that he is generally left severely alone, all the other birds giving him a wide berth. Now and again he becomes very eccentric in his flight, darting vertically up into the air, while he often soars to a considerable height. When a portion of ground is fired by the natives, numbers of these birds may be seen on the confines of the fire, catching the insects that are driven out by the heat, while some fly even into the flames, and we have seen more than one bird crippled.

The notes of the male bird are screeching and metallic, and these are rendered into a kind of chattering song when the pairing-season approaches. At that time the presence of this Drongo becomes less noticeable, since it retires to the thick woods to breed. Towards the end of December the young were abroad, generally in company with one of the parent-birds. They are very fond of frequenting fish-cane overhanging pools of water, where they congregate towards evening, and may be seen constantly flying out across the water in short circuits after their prey, or mounting vertically into the air; while they are always the last birds to retire for the night, not unfrequently keeping the Nightjar company. Off and on the males utter their peculiar songs, commencing with a clear mellow note, which leads one to expect a string of pretty ones of equal value, but the clear note soon terminates in the chatter already mentioned.

The immature bird has the underparts a dull brown; the feathers of the under wing-coverts, abdomen, and under tail-coverts being edged with white, which is gradually lost as the feathers become suffused with the steel-blue gloss of the adult.

60. PRIONOPS TALACOMA Smith.

Not numerous, fond of thick places, travelling in perfect silence in small parties through the monotonous woods of

Copaifera mopane, where they are almost the only birds to be seen. Sometimes they are pursued by Drongo Shrikes, which despoil them of their prey. They have an airy flight, which gives one the idea that they are made of paper.

Adult. Iris and soft parts yellow; legs and feet coral-red.

61. SIGMODUS TRICOLOR (Gray).

Adult ♂. Total length (measured in flesh) 8·2 inches. Bill coral-red, yellowish at tip; iris and eyelids red; legs and feet coral.

62. CAMPOPHAGA NIGRA Vieill.

Observed singly and in pairs towards the breeding-season, which commences in December. They keep much to the tall acacia-trees, and their flight is rapid and straight. The glossy steel-black of their plumage serves always to distinguish them from the Drongo Shrikes in whose company they are not unfrequently found.

Adult ♂. Total length (measured in flesh) 7·6 inches. Iris brown; throat and gape yellow; legs and feet brown.

63. ENNEOCTONUS COLLURIO (Linn.).

The Red-backed Shrike appeared near Zumbo on November 29, and by the end of December it became very numerous, adult males being especially noticeable. This bird soon got into our bad books, and it was not long before it became a byword among us, for whenever one of our party returned to camp the question, "Have you shot a Red-backed Shrike?" was invariably asked. Its power of mimicking the poses of other birds was most remarkable, and far more resorted to than it is in England. This Shrike seemed to prey chiefly on the small Estreldas and Sun-birds, owing probably to the scarcity of insect-life, and therefore some kind of deception was necessary. At one time this bird would sit close to a bough, all puffed out, looking for all the world like some comfortable Weaver. At another time it would perch with straightened legs and shoulders all hunched up, after the manner of a little Hawk, or put itself in a climbing position, like a Warbler. Owing to these assumed attitudes the

Red-backed Shrike frequently fell a victim to our guns, greatly to our disgust on finding ourselves so thoroughly deceived.

64. Nilaus nigritemporalis Reichen.

By no means common. Our four specimens were obtained on high ground clothed with the tree *Copaifera mopane.* A male obtained on October 7 had breeding-organs much developed, while on December 31 a nestling was procured. The call-note is a loud whistle.

Adult ♂. Total length (measured in flesh) 5·9 inches. Bill dark lead-colour; iris hazel; legs and feet slate.

65. Laniarius mosambicus (Fisch. & Reichen.).

From Tete onwards this species is well distributed along the river, for hardly a day passed without our hearing its clear-drawn piping notes. This Shrike abides in reed-beds, belts of fish-cane, and also frequents open land that is interspersed with clumps of thick bushes. When we first observed this species at the beginning of August breeding had not commenced, and it was then very shy and difficult of approach; in fact it was more often heard than seen. The call-note is peculiar, very gruff, and might be likened to the croak of the bull-frog, while it is at the same time ventriloquial. In the pairing-season, when seeking a mate, this species makes continual use of this note, which it utters from the top of some high tree. At almost regular intervals the note is given out in the same strain, becoming, however, more frequent and loud when the bird receives an answer, which may often come from a considerable distance. When the breeding-time arrives the different pairs resort to reed-beds and thick places, and with this coming of their breeding activity they lose a great deal of their shyness, and may frequently be observed stealing with low measured flight from one thick refuge to another. On approaching a resort the male will immediately utter his gruff frog-like croak to the female, who answers him with a similar note, but wheezy in strain and rather long-drawn. The ventriloquial croak of the male is often uttered as a safeguard against danger in order to conceal his exact whereabouts, and I have frequently witnessed an example of this when a Hawk has been hovering over the reed-bed haunt of this bird. Besides the call-note, the male bird utters a remarkable love-cry. With a sharp clapping together of the wings, a soft clarion-like whistle is given out, followed immediately by a very peculiar note, in sound just as when a hammer is tapped against a sheet of tin. As the season advances this whistle becomes cracked and less clear in tone.

This Shrike is full of activity. He will wend his way through a maze of thick twigs and run up the limbs of a tree with extraordinary agility, his head all the while strained forward with anxious look, as if he were fleeing from some invisible foe. Although he is of a quarrelsome nature, and is continually worrying other members of the bird-fraternity that frequent the same thicket as he does, yet they seem to tolerate him, since he never fails to warn them of approaching danger by uttering his frog-like notes of alarm. More than once has this bird deprived me of a fine specimen that was almost within my grasp. The food is varied. The small Estreldas that thread their way through the reeds and thickets are often attacked and become his prey.

We obtained a fine series of this Shrike, both immature and adult. In two fully adult specimens the white on the secondaries is confined to only one of the wing-feathers; in the immature birds the white is sometimes on two or three of the secondaries, and in one instance the third white stripe is in the process of disappearing. Again, the adults have no white tips to the outer tail-feathers, while all the others possess them. We are therefore of the opinion that the number of the white stripes on the wing-feathers is of no specific value, and that the number decreases with age, while it is quite possible that in very old birds the wing-feathers become entirely black. To the same cause may be attributed the disappearance of the white tips, which in very young birds are buffish white, to the outer tail-feathers. Furthermore, in the series before us, we find that the buffish tints of the underparts in the immature birds are absent in the adults, whose breasts are a creamy white, a beautiful rosy tinge pervading the feathers in life.

Adult ♂ (near Tete). Total length (measured in flesh) 9·14 inches, wing 3·64, culmen 0·85, tail 4. Iris hazel; legs and feet slate.

Adult ♂ (near Kafue river). Total length (measured in flesh) 9 inches, wing 3·7, culmen 0·8, tail 4.

Adult ♀ (near Tete). Total length (measured in flesh) 8·3 inches, wing 3·4, culmen 0·8, tail 3·9.

Adult ♀ (Chicowa). Wing 3·6 inches, culmen 0·79, tail 3·95.

66. Dryoscopus cubla (Shaw).

Well distributed. Breeds towards the end of November, at which time of the year its food consists to a great extent of the buds of acacia-trees. Hardly a day passed without our hearing its clear bell-like note. As the breeding-season approaches, this Shrike makes a "whirring" sound with its wings when in flight; it seems to be performed only by the male, presumably in order to make the female aware of his presence, and especially is this noticeable when the undergrowth is thick with leaf.

67. Telephonus senegalus (Linn.).

This species takes the place of *T. minor*, to a great extent, on the higher reaches of the river from Zumbo onward. There is no difficulty in identifying this large Shrike, while its habits, too, are somewhat different. Unlike *T. minor*, it never sings on the wing, but always when stationary; and further, it does not on the approach of the breeding-season make a "whirring" sound with the wings. It is altogether of a more retiring nature. The song, uttered from some thicket, is melodious, and might be rendered "tu-tu-tui-tui," constantly repeated.

Specimens obtained at the beginning of January had the breeding-organs largely developed.

68. Telephonus minor Reichen.

This Shrike keeps to long grass and thick bushes, imitating very often, when pursued, the call-note of the Quail. In the breeding-season the male bird will continually rise up with a whirring sound of the wings vertically into the air, and then drop to earth again in a curious manner, as if it had suddenly lost control of its flight and was endeavouring to reach the ground the best way it could, uttering the whole time a string of musical notes, descending in scale, the rendering of which is very true.

Adult ♂. Bill dark lead-colour; iris claret-colour; legs and feet slate. In immature birds the bill is light horn-colour and the iris hazel.

69. MALACONOTUS SULPHUREIPECTUS (Less.).

Breeds in November. On June 1st, while forcing our way through a thick wood, we discovered a nest containing three eggs, built in an acacia-bush, and about 30 feet up. It was of slight construction, consisting of small fine bents for a lining and coarser ones outside. The eggs have a greenish white ground-colour, spotted and blotched all over with brown, chiefly at the larger end, so as to form a zone. Average measurements ·85 × ·62 inch.

Adult ♂. Bill black; iris reddish brown; legs and feet slate.

In very young birds the chin and throat are white, contrasting strongly with the uniform yellow breast.

70. MALACONOTUS POLIOCEPHALUS (Licht.).

71. NICATOR GULARIS Finsch & Hartl.

This uncommon Shrike is seldom seen away from thick woods, being of an extremely shy nature. A male obtained on December 23 had sexual organs in breeding condition.

Adult ♂. Iris brown; throat and eyelids yellow; legs and feet slate.

[To be continued.]

XLVII.—*Descriptions of seven new Species of Birds from the Interior of Hainan.* By W. R. Ogilvie Grant.

The collection formed by the late Mr. John Whitehead on the lower slopes of the Five-finger Mountain in the interior of Hainan has recently arrived, and contains a number of interesting birds, of which seven are new to science. A full report on the collection as a whole will be published in a later number of 'The Ibis.'

1. Cittocincla brevicauda, sp. n.

Adult male. Most nearly allied to *C. tricolor,* but at once distinguished by its smaller size and by having the middle tail-feathers subequal to the following pair.

In *C. tricolor* the elongate middle tail-feathers are developed in the youngest males. The two middle pairs of tail-feathers are entirely black, the third pair tipped with white (0·3 inch), the 4th, 5th, and 6th pairs more widely, the white on the 4th pair extending for 1 inch, and on the outer pair 0·7 inch.

2. Dryonastes castanotis, sp. n.

Very distinct from, but perhaps most nearly allied to, *D. ruficollis* from India.

Adult male and female. General colour above slate-grey, tinged with greenish on the lower back and upper tail-coverts. Lores and feathers surrounding the eye and on the fore part of the cheek black; hinder part of the cheek and ear-coverts with a large rounded patch of bright chestnut; chin, throat, and upper part of the chest brownish black; rest of the underparts grey, tinged with greenish on the flanks, thighs, and under tail-coverts. "Bill and eye black; legs and feet dark blackish brown."—J. W.

Total length 10·7 inches, wing 5, tail 5, tarsus 1·75.

3. Gecinus hainanus, sp. n.

Adult male. Most nearly allied to *G. guerini* from China, but distinguished by the dark green colour of the upper and underparts; in *G. guerini* the general colour of the upper parts is dull greyish-green, and the underparts are similarly coloured, but paler.

This species is also related to *G. occipitalis,* which it resembles in the dark green colour of the underparts; but the tail-feathers are spotted, not barred.

"Iris white; bill grey-black; base greenish white; feet lead-grey."—J. W.

Total length about 10·8 inches, culmen 1·5, wing 5·3, tail 3·8, tarsus 1·05.

Adult female. Differs from the male only in lacking the red on the crown.

4. CHRYSOPHLEGMA STYANI, sp. n.

Most nearly allied to *C. wrayi* and *C. ricketti.* From the latter it differs in having the terminal part of the outer primaries mostly uniform black, as in *C. wrayi.* From *C. wrayi* it may be at once distinguished by the dark brownish-chestnut crown and dusky underparts; in both these respects it resembles *C. ricketti.*

"Iris dark claret; bill dusky black, lower mandible green at base; feet olive-green."—J. W.

Total length 11·5 inches, culmen 1·65, wing 6·0, tail 4·5, tarsus 1·05.

Adult female. Differs from the male in having the malar patches chestnut instead of white.

5. LEPOCESTES HAINANUS, sp. n.

Adult male. Most nearly allied to *L. sinensis* Rickett, which it resembles in the dark colour of the mantle, but the feathers of the lower back and rump are dark brown, indistinctly tipped with rufous, never barred with buff; the chin and throat more rufous; the general colour of the underparts darker, and the flanks and under tail-coverts uniform, without any traces of bars. The black bars on the wing and tail-feathers are wider and less numerous. "Iris brown; bill straw-yellow; legs dull blackish brown."—J. W.

Total length 10 inches, culmen 1·75, wing 5·3, tail 3·2, tarsus 1·05.

Adult female. Differs from the male in lacking the scarlet nuchal collar.

This is, no doubt, the species identified by Mr. Styan (Ibis, 1893, p. 431) as *L. pyrrhotis* (Hodgs.), but it is at once distinguished from that species by the dark colour of the back and by the uniform thighs and under tail-coverts.

6. Nycticorax magnifica, sp. n.

Adult male. Most nearly allied to *N. leuconotus* (Wagl.) from Africa, but differing chiefly in the following particulars:—The back is uniform brown like the wings; some of the feathers of the lower back have a subterminal oval white spot at the extremity; a white band runs from behind the eye to the base of the long black crest (3 inches in length); the chin, throat, and fore part of the sides of the neck are white; the hinder parts of the sides of the neck chestnut; the middle of the fore-neck dark reddish brown, widely edged on either side with black; some of the intermediate feathers with pale buff middles; the rest of the underparts white, with wide irregular margins of reddish brown; and the thighs are dark reddish brown. "Iris dark brown; skin round the eye and base of bill sulphur greenish yellow; bill black; feet pea-green."—J. W.

Total length about 20 inches, culmen 3·1, wing 11·9, tail 4·9, tarsus 2·95.

This magnificent species is not really very closely allied to any known form; the style of the coloration on the underparts is most like that of *Gorsachius melanolophus.*

7. Gennæus whiteheadi, sp. n.

The male of this remarkably fine species is most nearly allied to *G. nycthemerus,* but differs conspicuously in many important particulars.

Adult male. Nape and upper mantle pure white; each feather of the lower mantle, back, rump, shorter upper tail-coverts, and wing-coverts with *one* black submarginal band on each web forming an arrow-shaped black marking, which gradually increases in width towards the tail, most of the feathers being also narrowly fringed with black. Longer upper tail-coverts and secondaries very boldly marked with successive black arrow-heads. Primaries black, with wide oblique white markings. Middle tail-feathers almost pure white; second and third pairs white, with wide (about 0·5 inch) oblique black bands on the outer web, the latter pair with some irregular black marking on the inner web also; remaining pairs white, with wide oblique black bands on both webs, forming an irregular arrow-head pattern. "Iris brownish yellow; naked wattle and skin on sides of face scarlet; bill greenish white; legs coral-red."—J. W.

Total length 35 inches, wing 9·4, tail 20, tarsus 3·15.

Adult female. Most nearly resembles the female of *G. andersoni*, but is much darker. The feathers of the back of the neck and mantle mostly black, with wide white shaft-streaks; the underparts, including the under tail-coverts, similar, but with wider white middles; outer tail-feathers uniform dark chestnut, with indistinct vermiculations of black. "Iris light brown; upper mandible greenish brown, lower dull green; naked skin on face red; legs and feet bright scarlet."—J. W.

Total length 21·5 inches, wing 8·1, tail 8·8, tarsus 2·9.

XLVIII.—*List of Birds obtained in British East Africa.* By F. J. Jackson, C.B., F.Z.S.—Part I. *With Notes by* R. Bowdler Sharpe, LL.D. &c.

(Plates XII., XIII.)

The following is a list of the birds obtained by me in various parts of British East Africa and the Equatorial Provinces from 1892 to 1898. My friend Dr. Sharpe has kindly added a few critical notes on some of the species, and I hope on a future occasion to describe more fully the nests and eggs in my collection.

Fam. Corvidæ.

1. Heterocorax capensis.

Heterocorax capensis (Licht.); Sharpe, Ibis, 1891, p. 239.
Corvus capensis Shelley, B. Africa, i. p. 46 (1896).

Nos. 869, 876. ♂ ♀. Nandi, 6500 feet, Feb. 15, 1898. Iris brown; bill and feet black. Nearly always in pairs. A noisy bird.

2. RHINOCORAX AFFINIS.

Rhinocorax affinis (Rüpp.); Sharpe, Ibis, 1891, p. 239.

Corvus affinis Shelley, B. Africa, i. p. 46 (1896).

No. 303. ♀. Elgeyu, 3700 feet, Aug. 20, 1896. Scarce, only two others seen. Stomach full of eggs and young birds.

3. CORVUS SCAPULATUS.

Corvus scapulatus Daud.; Sharpe, Ibis, 1891, p. 239; Reichen. Vög. deutsch. Ost-Afrikas, p. 165 (1894); Shelley, B. Africa, i. p. 46 (1896).

No. 9. ♂. Ntebi, Aug. 30, 1895.

4. CORVULTUR ALBICOLLIS.

Corvultur albicollis (Rüpp.); Reichen. J. f. O. 1892, p. 40; id. Vög. deutsch. Ost-Afrikas, p. 166 (1894); Shelley, B. Africa, i. p. 46 (1896).

No. 816. ♂. Kampala, Jan. 15, 1898.

No. 1274. ♀. Nandi, 6500 feet, July 9, 1898. Iris brown; bill black, with the tips of both mandibles white; feet black. This fine Raven is plentiful in Nandi. It is a tame and confiding bird. Although plentiful here now in July, it was not present two months ago, and was probably away breeding. Weight 2 lbs. 3 oz.

Fam. STURNIDÆ.

5. DILOPHUS CARUNCULATUS.

Dilophus carunculatus (Gm.); Sharpe, Ibis, 1891, p. 243; Reichen. J. f. O. 1892, p. 41 (Ikuru Island; Umpeke); id. Vög. deutsch. Ost-Afrikas, p. 171 (1894); Shelley, B. Africa, i. p. 46 (1896).

No. 639. ♂ ad. Nandi, 7000 feet, April 30, 1897. Iris brown; bill pinkish horn-white; wattles and front part of bare skin of face dull black; upper part of head yellow; feet brown. A single bird. Several seen, in flocks of from 20 to 30, in the Ravine, July 8, 1897.

Nos. 731, ♂, 753, 754, ♀. Lake Naivasha, May 11, 1897.

No. 788. ♂ imm. Lake Naivasha, May 19, 1897.

Fam. EULABETIDÆ.

6. PHOLIDAUGES VERREAUXI.

Pholidauges verreauxi Bocage; Sharpe, Ibis, 1891, p. 240 (Mt. Elgon); Reichen. Vög. deutsch. Ost-Afrikas, p. 171 (1894); Shelley, B. Africa, i. p. 42 (1896).

No. 369. ♂. Njemps, Sept. 19, 1896.

No. 98. ♂. Ravine, Mau, 7500 feet, June 18, 1896. Plentiful at the Ravine.

No. 423. ♂. Ravine, June 20, 1896. Plentiful.

No. 507. ♀. Ravine, March 4, 1897. Iris bright yellow; bill black; feet brownish black. Fairly plentiful, but only singly or in pairs; at present breeding. Nest found in hole of hollow stump, five feet from the ground; composed of fine green leaves, small like those of privet. Two eggs, pale greenish blue, with reddish-brown speckles, much incubated. This female was shot from the nest as she flew off, at 5.30 P.M., and her stomach was perfectly empty and the ovaries small; she was doubtless sitting on these two eggs, which is probably the full complement, as it is with most birds out here.

No. 519. ♂. Ravine, March 7, 1897. A pair seen.

Nos. 678, 679. ♀. Ravine, July 21, 1897.

Nos. 909, 910. ♂. Ravine, March 4, 1897.

7. PHOLIDAUGES LEUCOGASTER.

Pholidauges leucogaster (Gm.); Reichen. J. f. O. 1892, p. 41 (Sirwa, Kimoani); Shelley, B. Africa, i. p. 42 (1896).

No. 1243. ♂. Nandi, 6500 feet, June 26, 1898. Iris cream-colour round the pupil, fading into yellow; feet black. Appears to be rather a rare bird in Nandi. This was one out of a small flock of five or six. They were attracted by the small fruit of a large tree in the garden here.

[It is interesting to find the true *P. leucogaster* in Nandi, instead of the common *P. verreauxi,* which is so plentiful in other parts of East Africa. There is no question as to the identification of the specimen.—R. B. S.]

8. Pholidauges sharpei. (Plate XII.)

Pholidauges sharpei Jackson, Bull. Brit. Orn. Club, viii. p. xxii (1898).

No. 520. ♂. Ravine, March 7, 1897. Iris bright yellow; bill black; feet brownish black. First one seen. Stomach contained a berry and fruity matter.

No. 562. ♂ juv. Ravine, March 27, 1897. Iris dull green; bill black; gape yellow; feet black.

No. 563. ♀ imm. Ravine, March 27, 1897. Iris dull green.

No. 567. ♂. Ravine, March 28, 1897. Iris bright yellow; bill and feet black. Singly or in small family-parties. Stomach contained berries and insects.

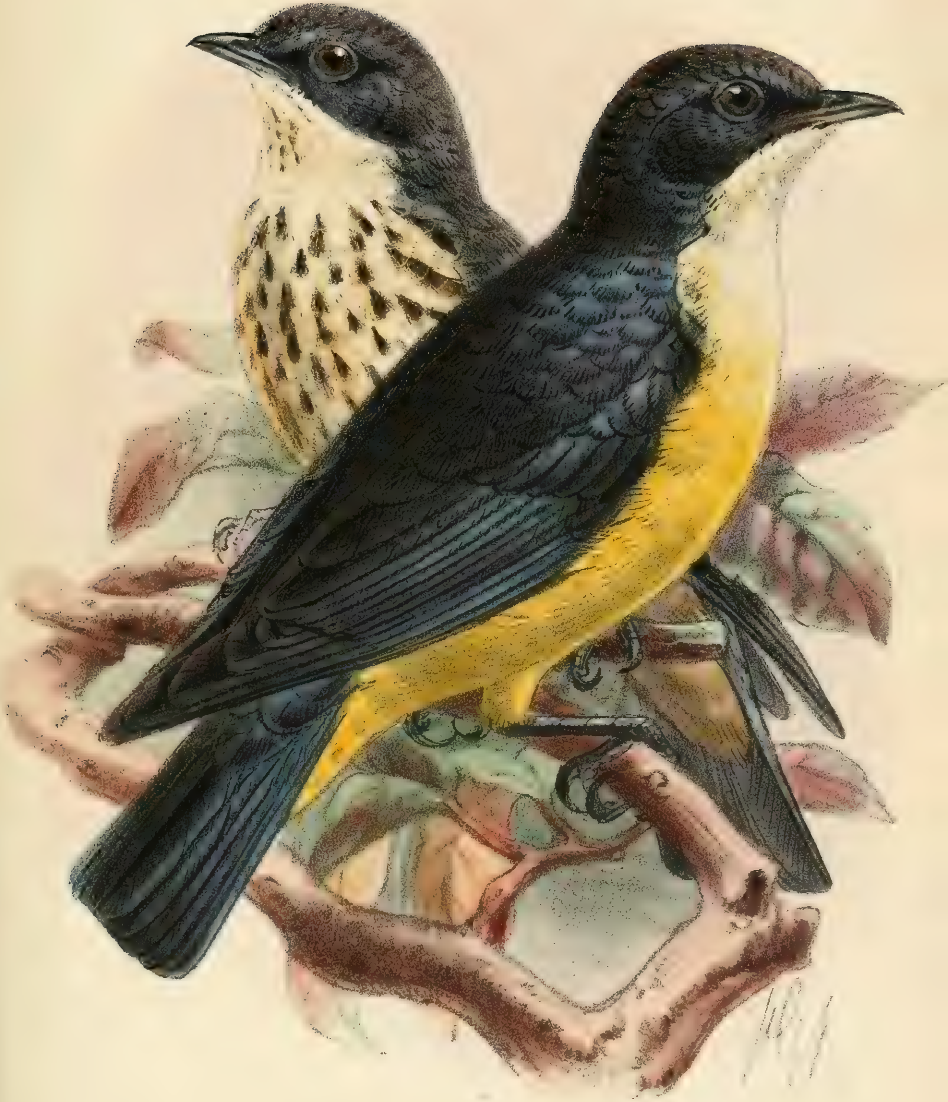
No. 1130. ♂. Nandi forests, 6000 feet, May 19, 1898. Iris bright yellow; bill and feet black.

No. 1280. ♂. Ravine, Aug. 5, 1898. Fairly plentiful in small flocks of from three to eight.

[The following is a full description of this new species, which is not to be confounded with any of the other species of *Pholidauges,* owing to the want of black or purple on the throat:—

Adult male. General colour above glossy purplish black, shot with metallic green or steel-blue, the head rather more purple than the back; wing-coverts glossy black, with the same reflections as the back; quills and tail black, glossed externally with dark steel-blue or purplish green; sides of face, ear-coverts, and sides of neck purplish black; cheeks and throat white, tinged with pale cinnamon, this colour gradually predominating on the breast till the abdomen, vent, lower flanks, and under tail-coverts are clear cinnamon-rufous; sides of breast and flanks glossy blue-black; thighs cinnamon-rufous, black on the hinder aspect; under wing-coverts and axillaries glossy blue-black: "bill and feet black; iris bright yellow" (F. J. J.). Total length 7·2 inches, culmen 0·65, wing 4·2, tail 2·75, tarsus 0·95.

The only hen bird procured by Mr. Jackson is immature. The adult female will probably be found to resemble the male. Young birds, both male and female, are sooty brown,



J. G. Keulemans del. et lith.

Mintern Bros. imp.

PHOLIDAUGES SHARPII. AD. ET JUV.

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OF NATURAL HISTORY

much more dusky than the adults. The greater wing-coverts have a narrow fringe of buff at the ends. The throat is sparsely spotted with black, and the fore-neck and breast have numerous triangular spots of black, much larger than on the throat, and taking the form of longitudinal streaks on the sides of the body: "iris dull green" (F. J. J.).

In the 'Catalogue of Birds' (vol. xiii. App. p. 667) I made a mistake in following Capt. Shelley in his identification of *Spreo fischeri* of Reichenow. The bird which we erroneously conceived to be the male of *S. fischeri* (Cat. p. 189) is really quite a distinct species, and is the *Pholidauges femoralis* of Richmond (Auk, 1897, p. 160), as has been pointed out to me by my friend Mr. Oscar Neumann.—R. B. S.]

9. LAMPROTORNIS BREVICAUDUS.

Lamprotornis porphyropterus (nec Rüpp.), Sharpe, Ibis, 1891, p. 240 (Turquel).

Lamprotornis purpuroptera (nec Rüpp.), Reichen. J. f. O. 1892, p. 42 (Bukome: Itale); id. Vög. deutsch. Ost-Afrikas, p. 173 (1894).

Lamprotornis brevicaudus Sharpe, Bull. Brit. Orn. Club, vi. p. xlviii (1897).

No. 10. ♂ ad. Kinani, Sept. 22, 1894. Iris straw-colour; bill and feet black.

Nos. 242, 268. ♂. Elgeyu, 3700 feet, Aug. 12–15, 1896. Iris straw-colour; bill and feet black. Very plentiful; breeding. They make a shallow nest of sticks, mostly thorny, very rough.

No. 832. ♂. Samia Hills, Kavirondo, Feb. 5, 1898. Song short, but very sweet. Seen in small parties of from three to five.

[All the specimens obtained by Mr. Jackson confirm the character of the shorter tail in this race. Not one of them has a tail of 6 inches in length.—R. B. S.]

10. AMYDRUS ELGONENSIS.

Amydrus elgonensis Sharpe, Ibis, 1891, p. 242.

No. 89. ♂. Ravine, Mau, 7500 feet, June 15, 1896. Iris crimson; bill and feet black. In flocks at present, attracted by the ripe fruit of several trees. I have not noticed this species till the last few days.

Nos. 1188, 1189. ♂ ♀. Nandi, 6500 feet, June 4, 1898. Iris dark crimson, the pupil very large; bill and feet black. Not seen in Nandi before to-day, when I found this pair breeding in a hollow tree some thirty feet from the ground. Unfortunately the eggs had been hatched, and there were two young birds in the nest.

No. 1216. ♀. Nandi, 6500 feet, June 17, 1898.

No. 1236. ♀. „ „ June 24, 1898.

[The steel-green, instead of purplish, shade on the throat distinguishes the male of *A. elgonensis* from *A. walleri*, but they are certainly very closely allied. The head and throat in the female of *A. elgonensis* are mottled with mesial streaks and spots of black.—R. B. S.]

11. Amydrus morio.

Amydrus morio (L.); Sharpe, Ibis, 1891, p. 242 (Ukambani; Turquel; Mt. Elgon); Reichen. Vög. deutsch. Ost-Afrikas, p. 173 (1894); Shelley, B. Africa, i. p. 44 (1896).

No. 67. ♂. Kedong valley, April 17, 1896. Iris dark crimson; bill and feet black. Large flocks of these birds were observed flying across the Kedong valley from west to east.

12. Pœoptera greyi.

Pœoptera greyi Jackson, Bull. B. O. C. viii. p. l.

Nos. 1124, 1125, ♂; 1126, 1127, ♀. Nandi forests, 6000 feet, May 19, 1898. Iris brown, with outer ring of yellow; bill and feet shining black. When first seen I mistook a flock of these birds for small Bee-eaters, which they resembled in a remarkable degree, both in flight and in their short, loud, trilling note. To-day (May 19) I procured four specimens, and, unfortunately, lost two others in dense green undergrowth. Several small flocks were attracted by a little yellow fruit of a tall forest-tree in a small clearing.

These birds, together with *Zosterops*, Bulbuls, Barbets, and other birds, were either so intent on the fruit or so unaccustomed to the report of a gun (certainly not a loud one, as I was using E.C. powder) that, until I had fired several shots, they took no notice, but went on feeding. Even when eventually they took alarm, they only flew a short distance to the nearest tree, and came back again almost immediately. The females are easily distinguished from the males, when on the wing, by their conspicuous reddish-brown primaries.

[*P. greyi*, named by Mr. Jackson in honour of Sir Edward Grey, Bart., M.P., the late Under-Secretary of the Foreign Office, is a larger bird than *P. lugubris*, has a much broader and less pointed tail, and has dark wings, not showing the light brown patch on the greater wing-coverts and secondaries, which is a very strong feature in *P. lugubris*.

The types of *P. kenricki* Shelley differ entirely from the four specimens of *P. greyi* collected by Mr. Jackson in being glossy bronzy-black, without any blue or purple lustre. The wings are blackish, without any paler brown wing-patch. The *P. lugubris* from Kilimanjaro, mentioned by Dr. Reichenow (Vög. deutsch. Ost-Afrikas, p. 173), is probably the same as *P. greyi*.—R. B. S.]

13. Lamprocolius glaucovirens.

Lamprocolius glaucovirens Elliot; Sharpe, Cat. B. Brit. Mus. xiii. p. 173, pl. vii. fig. 2 (1890); Reichen. J. f. O. 1892, p. 42 (Bukoba, Sesse Isl.); Shelley, B. Africa, i. p. 43 (1896).

a–d. ♂. Ntebi, Dec. 19–20, 1894. Bill and feet black; iris yellowish white.

No. 942. ♂. Kakamega, Kavirondo, 5600 feet, April 7, 1898. Plentiful in the patch of open forest near Clarke's bridge over the Ichaka river.

Nos. 1168–1169, ♂; 1170, ♀. Nandi, Aug. 29, 1898. Iris straw-colour. Now in pairs and breeding. Makes a nest of dry grass in holes in trees from 20 to 30 feet above the ground. The cock birds are very noisy, but many of their notes are pleasant. When flying they make a loud swishing noise with their wings. They would make splendid cage-birds.

[There is a striking difference in the colour of the sexes, the female being bluish purple on the throat instead of coppery purple as in the male, and the breast is purple, without any of the bronze which is such a conspicuous feature in the male. The pair of birds which show these differences were shot by Mr. Jackson in Nandi from the nest, and I at first thought that both *L. glaucovirens* and *L. splendidus* occurred in Equatorial Africa, and that the two species were identical. I believe now, however, that *L. splendidus* is confined to Senegambia. Dr. Reichenow (J. f. O. 1892, p. 42) has included both species in his list of the birds of the Victoria Nyanza, and says that both sexes of each bird were obtained; but I suspect that the specimens which he identifies as *L. splendidus* are really the females of *L. glaucovirens.*—R. B. S.]

14. LAMPROCOLIUS CHALYBEUS.

Lamprocolius chalybeus (Ehr.); Sharpe, Ibis, 1891, p. 242; Shelley, B. Africa, i. p. 43 (1896).

No. 45. ♀. Ravine, March 21, 1896. Iris bright orange-yellow; bill and feet black. Plentiful at present in pairs, evidently about to breed.

Nos. 299, 300. ♂ ad. ♀ juv. Elgeyu, 3700 feet, Aug. 19, 1896. Plentiful.

No. 532. Ravine, 7500 feet, March 16, 1897. Now in pairs, breeding. Builds in holes of trees about 20 feet from the ground. Nest of dry grass, thickly lined with feathers.

Nos. 622, 623. ♂ ♀. Ravine, 7500 feet, April 12, 1897.

No. 906. ♂. Ravine, 7500 feet, March 7, 1898.

No. 1121. ♂. Nandi, 6500 feet, Aug. 19, 1898.

[In the series collected by Mr. Jackson the shoulder-spot is purplish blue, and only the Nandi specimen shows any tinge of violet or reddish copper. I have re-examined the series in the British Museum, but am not able to determine that there is more than one species, a conclusion which I arrived at in the 'Catalogue of Birds' (vol. xiii. p. 177). The males in Mr. Jackson's set have the wing about 5·8 inches, and in the female, which is the smaller bird, the wing is 5·3–5·4 inches.—R. B. S.]

15. SPREO SUPERBUS.

Spreo superbus (Rüpp.); Sharpe, Ibis, 1891, p. 243; Reichen. Vög. deutsch. Ost-Afrikas, p. 171 (1894); Shelley, B. Africa, i. p. 44 (1896).

No. 269. ♂. Elgeyu, 3700 feet, Aug. 15, 1896. Iris straw-colour; bill and feet black. Plentiful.

Fam. BUPHAGIDÆ.

16. BUPHAGA ERYTHRORHYNCHA.

Buphaga erythrorhyncha (Stanley); Sharpe, Ibis, 1891, p. 243; Reichen. Vög. deutsch. Ost-Afrikas, p. 170 (1894); Shelley, B. Africa, i. p. 41 (1896).

Nos. 1141, 1155, 1165. ♂. Nandi, May 23–29, 1898. Iris vermilion, with an inner ring of yellow; eyelids bright yellow; bill bright coral-red; feet dull brown. The Rhinoceros Bird, so called from its being found more often on the large pachyderm than on any other game-beast, is fairly plentiful in Nandi. It visits cattle for the sake of the ticks, and also attends donkeys, but only when they have sore backs. This bird is evidently most useful in relieving cattle and game of the large number of ticks that accumulate on them, but undoubtedly it does a great deal of damage to draught-oxen, donkeys, &c.

Fam. ORIOLIDÆ.

17. ORIOLUS ROLLETI.

Oriolus larvatus (nec Licht.); Sharpe, Ibis, 1891, p. 243 (Turquel; Mt. Elgon).

Oriolus rolleti Salvad.; Reichen. Vög. deutsch. Ost-Afrikas, p. 168 (1894).

Oriolus larvatus pt., Shelley, B. Africa, i. p. 41 (1896).

a, b. ♂. Ntebi, Aug. 1, 1895. Iris crimson; bill dull carmine; feet slate-colour.

No. 333. ♂ ad. Kamassia, 6500 feet, Aug. 24, 1896. Very plentiful. Iris crimson; bill pinkish brown; feet horn-blue.

No. 676. ♂. Ravine, July 21, 1897. Bill dull rosy brown.

Nos. 1226, 1228. ♂ ♀. Nandi, 6500 feet, June 28, 1898.

No. 1249. ♀ juv. Nandi, 6200 feet, June 28, 1898. Iris dark crimson-brown; bill black, with dull rose-coloured marblings; feet dark horn-blue.

Fam. DICRURIDÆ.

18. BUCHANGA AFRA.

Buchanga assimilis (Bechst.); Reichen. J. f. O. 1892, p. 41 (Uganda).

Dicrurus afer, Reichen. Vög. deutsch. Ost-Afrikas, p. 166 (1894); Shelley, B. Africa, i. p. 47 (1896).

No. 311. ♂. Elgeyu, 3700 feet, Aug. 20, 1896. Iris crimson; bill and feet black. Plentiful.

Nos. 334, 335. . Kamassia, 6500 feet, Aug. 24, 1896.

Fam. PLOCEIDÆ.

19. VIDUA PRINCIPALIS.

Vidua principalis (L.); Sharpe, Ibis, 1891, p. 244; Reichen. J. f. O. 1892, p. 49 (Bukoba); Shelley, B. Africa, i. p. 23 (1896).

Vidua serena, Reichen. Vög. deutsch. Ost-Afrikas, p. 193 (1894).

a, b. ♂ ♀. Ntebi, March 14, 1895.

No. 933. ♂. Kavirondo, 4500 feet, March 28, 1898. Several others seen. In flocks. Iris brown; bill coral-pink; feet slate-colour.

No. 1175. ♂. Nandi, 6500 feet, May 31, 1898. Rather a scarce bird. Goes about in flocks of eight or ten individuals, of which perhaps three only will be males.

No. 1191. ♂. Nandi, 6500 feet, June 4, 1898.

20. LINURA FISCHERI.

Linura fischeri (Reichen.); Sharpe, Cat. B. Brit. Mus. xiii. p. 210 (1890); Reichen. Vög. deutsch. Ost-Afrikas, p. 192 (1894).

Vidua fischeri, Shelley, B. Africa, i. p. 23 (1896).

Nos. 74, 79, 80, 83, ♂; 76, ♀; 84, ♂ juv. Between Ndai and Kinani, April 2, 1892.

Of this interesting Weaver-bird I procured a few specimens out of a small flock at a water-hole in the wilderness. Other flocks of *Vidua principalis* and *V. hypocherina* were also present, but each species kept apart from the others. Small flocks of *Steganura paradisea* were also observed.

I was fortunate enough to procure the female of the *Linura*, which is, I believe, hitherto undescribed. As might have been expected, it is very similar to the hen of *Vidua principalis*, but has an almost uniform reddish-brown head, with no lateral black bands, and the soft parts are akin to those of the male, as will be seen by the following note which I made at the time :—" Bill dull pink; feet pale dusky pink; iris brown."

The adult males have the iris brown, the feet bright coral-red, and the bill dull coral-red.

The female had an egg inside her, and it was evident that the birds were either breeding or about to breed. The males were also in fine plumage, exceedingly black on the back, with scarcely any traces of sandy margins to the feathers.

I had previously seen this species only in the Kilimanjaro district.

21. STEGANURA PARADISEA.

Steganura paradisea (L.) ; Sharpe, Cat. B. Brit. Mus. xiii. p. 211 (1890) ; Reichen. Vög. deutsch. Ost-Afrikas, p. 192 (1890).

Vidua paradisea Shelley, B. Africa, i. p. 23 (1896).

a, b. Nos. 93, 96. ♂. Ungazunga, Teita, April 5, 1892. Feet brown ; bill black ; iris brown.

This beautiful little bird is very plentiful on the coast, and I have also seen it in the Kilimanjaro district and as far north as Lake Baringo. It is generally found in the vicinity of " shambas " cultivations.

22. CHERA PROGNE.

Chera progne (Bodd.) ; Sharpe, Ibis, 1891, p. 244.

Coliopasser progne Shelley, B. Africa, i. p. 23 (1896).

Nos. 73, 74, 75. ♂. Swamp north of Lake Elmateita, April 23–25, 1896. Several small flocks, in which the number of females predominated, seen in the long grass on the edge of the swamp.

No. 79. ♂. Ravine, April 25, 1896. On the edge of the large swamp below the Ravine to the east.

23. PENTHETRIA ARDENS.

Penthetria ardens (Bodd.); Sharpe, Ibis, 1891, p. 244 (Teita).

Coliuspasser rubritorques (Swains.); Reichen. J. f. O. 1892, p. 45 (Bukoba, Uliambiri Isl.); id. Vög. deutsch. Ost-Afrikas, p. 192 (1894); Shelley, B. Africa, i. p. 33 (1896).

a. ♂. Ntebi, March 5, 1895.

24. PENTHETRIA LATICAUDA.

Penthetria laticauda (Licht.); Sharpe, Ibis, 1891, p. 245 (Elgeyu; Lake Nahuro).

Coliuspasser laticauda Reichen. Vög. deutsch. Ost-Afrikas, p. 191 (1894); Shelley, B. Africa, i. p. 24 (1896).

No. 158. ♀. Nandi, 6500 feet, July 7, 1896. Iris brown; bill horn-brown, the lower mandible dusky horn-white; feet brown.

No. 215. ♂ ad. Mau Plateau, 8700 feet, Aug. 3, 1896. Iris brown; bill and feet black. Plentiful in boggy hollows where the grass is long. I saw this bird playing at its game of jumping up and down (*cf.* Ibis, 1891, p. 245).

No. 971. ♂. Nandi, 6500 feet, April 12, 1898. Iris brown; bill brown, the lower mandible pale brown at tip, fading into dusky white at base; feet brown. Still in flocks, consisting mostly of males in mottled plumage.

Nos. 997–1000. ♀ ad. et ♂ juv. Nandi, 6500 feet, April 16, 1898. All shot out of one large flock.

No. 1184. ♂ ad. Nandi, 6000 feet, June 2, 1898.

25. PENTHETRIA EQUES.

Penthetria eques (Hartl.); Sharpe, Cat. B. Brit. Mus. xiii. p. 220 (1890); id. Ibis, 1891, p. 245; Reichen. Vög. deutsch. Ost-Afrikas, p. 191 (1894).

Coliipasser eques, Shelley, B. Africa, i. p. 24 (1896).

No. 10. ♂. Ndera, Teita, Jan. 2, 1892.

This bird is fairly plentiful in suitable localities. It is very partial to long grass, and is most plentiful in swampy ground. Round about Witu in July it is plentiful. In Ukambani it was exceedingly plentiful among the cane-like grass on the banks of the river at Nzoi.

26. DREPANOPLECTES JACKSONI.

Drepanoplectes jacksoni Sharpe, Ibis, 1891, p. 247.

Coliipasser jacksoni Shelley, B. Africa, i. p. 24 (1896).

No. 77. ♂. N. of Lake Elmateita, April 25, 1896. Iris brown; bill pale green, the base and the lower mandible black; feet brownish black. Very plentiful in large flocks.

Nos. 1180–1183. ♂ ad. Nandi, 6000 feet, June 2, 1898. Now commencing to breed. I found the nests, but only one contained a single egg. The nest is rather a flimsy structure, made of fine dry grass and lined with the seed-heads of fine grass, with an entrance at the side, like the nest of a Willow Wren. It is placed on the edge of swampy places, but not on the coarse herbage of the swamps, within an inch or two of the ground The birds bend down the surrounding blades of grass and weave them into the top of the nest, which makes the latter not only more difficult to detect, but also renders it more waterproof. Like *Penthetria laticauda,* the cock birds make play-grounds for themselves, on which they dance up and down on and off throughout the day, but more vigorously in the early mornings and late evenings. Yesterday evening I watched several within a radius of 100 yards; and a truly ridiculous sight it was to see these pitch-black, curiously-shaped objects, bobbing up and down out of the grass. From an ant-heap close by I watched for a long time four cock birds within 40 yards of me; and as the sun was within half an hour of setting and shining brightly at my back, I had a first-rate opportunity of noticing how they assumed their curious attitude, and succeeded in making a fairly accurate drawing of them. The actual position is as follows:—The head is thrown back like that of a proud Turkey-cock, the beak being held horizontally. The feet hang downward; the tail is held straight up till it touches the ruff at the base of the head and neck, the ends of the feathers falling in a curve downward, with the exception of two tail-feathers which are held outward and downward.

While actually rising in the air the half-open wings are worked with a very quick shivering motion, and the feet are also moved up and down very rapidly. The bird springs straight up in the air, sometimes for a few inches and sometimes to a height of 2 feet, and then drops. The whole of the plumage is much puffed out throughout the performance, which is repeated five or six times, with a short interval for rest. The game would appear to be somewhat fatiguing, as a bird rarely makes more than five or six jumps at a time without a short rest. Only on one occasion was a female present on the play-ground. They very often assume their curious jumping attitude some little distance before they arrive at their play-ground. At night they roost in the tall reeds and rushes in the swampy hollows.

27. PENTHETRIOPSIS SOROR.

Penthetriopsis soror Reichen.; Sharpe, Ibis, 1891, p. 247.

Penthetria soror Reichen. Vög. deutsch. Ost-Afrikas, p. 191 (1894).

Coliipasser soror Shelley, B. Africa, p. 24 (1896).

a. ♂ ad. Busoga, Nov. 16, 1894. Bill black, the lower mandible horn-blue; feet slate-colour; iris brown.

No. 838. ♂ imm. Kakamega, Kavirondo, Feb. 8, 1898. Iris brown; bill black, the lower mandible horny white; feet black.

No. 932. ♂ ad. Kavirondo, 4500 feet, March 28, 1898. Bill black, the tips of the lower mandible horn-blue.

Nos. 1106–1108, ♂; 1109–1112, ♀. Kakamega, Kavirondo, May 15, 1898. In the males the iris is brown, the bill black, the lower mandible horny blue, with a black base. In the females the iris is brown, the bill pale olive-brown, the lower mandible whitish horn-colour; feet pale fleshy brown with dusky blue tints.

Not seen in the Nandi country. It is very plentiful in Kakamega and all along the cart-road to Manicus.

28. UROBRACHYA PHŒNICEA.

Urobrachya phœnicea (Heugl.); Sharpe, Ibis, 1891, p. 247; Reichen. J. f. O. 1892, p. 45 (Bukoba: Mengo); id. Vög. deutsch. Ost-Afrikas, p. 191 (1894); Shelley, B. Africa, i. p. 24 (1896).

a. ♂ ad. Ntebi, March 5, 1895.

b. ♀ ad. Kampala, March 18, 1895. Feet pale brown; iris brown; bill dusky brown.

c. ♂ ad. Kampala, March 18, 1895. Bill bluish horn-colour; feet black; iris brown.

d. ♂; *e, f.* ♀ ad. Kampala, April 4, 1895.

No. 996. ♀ ad. Nandi, 6500 feet. April 16, 1898. Iris brown; bill brown, the lower mandible horny white, with a pale brown tip; feet pale brown. At present in large flocks.

Nos. 1150, 1153. ♂ ♀ ad. Nandi, 6500 feet, May 25, 1898. Iris brown; bill bluish white; feet black. Now in full breeding-plumage, though still in flocks. Roosts among the rushes in swampy places.

Nos. 1159, 1160. ♂ ad. Nandi, 6500 feet, May 28, 1898. Iris brown; bill pale horn-blue; feet slaty black.

No. 1161. ♀ ad. Nandi, May 28, 1898. Iris brown; bill pale brown, the lower mandible whitish horn; feet brown, with a bluish tint.

No. 1179. ♀ ad. Nandi, May 31, 1898.

No. 1187. ♂ in change. Nandi, 6000 feet, June 2, 1898.

No. 1239. ♀ ad. Nandi, 6500 feet, June 25, 1898.

29. PYROMELANA FLAMMICEPS.

Pyromelana flammiceps (Swains.); Sharpe, Ibis, 1891, p. 248; Jackson, Ibis, 1898, p. 135.

Nos. 312, 313. ♂ ♀. Elgeyu, 3700 feet, Aug. 20, 1896. Scarce.

30. PYROMELANA FRANCISCANA.

Pyromelana franciscana (Isert); Sharpe, Ibis, 1891, p. 248; Shelley, B. Africa, i. p. 25 (1896).

No. 373. ♂. Njemps, Sept. 20, 1896. Iris brown; bill black; feet brownish flesh-colour.

31. PYROMELANA XANTHOMELÆNA.

Pyromelana xanthomelæna (Rüpp.); Sharpe, Ibis, 1891, p. 248; Shelley, B. Africa, i. p. 24 (1896).

Orynx xanthomelæna Reichen. Vög. deutsch. Ost-Afrikas, p. 190 (1894).

No. 51. ♂ in change. Ravine, March 23, 1896. Iris brown; bill pale horn-blue, with a dusky tip; feet brown.

No. 184. ♀ Ravine, July 21, 1896. Iris brown; bill brown, the lower mandible horn-white; feet brownish flesh-colour. Plentiful.

Nos. 203, 204. ♂. Ravine, July 28, 1896. Plentiful on the Ravine in the shambas and low grass.

No. 274. ♂. Elgeyu, 3700 feet, Aug. 16, 1896. Very plentiful. Breeding.

Nos. 296, 297. ♂ ♀. Elgeyu, Aug. 19, 1896. Breeding. Eggs two or three. Nest in long grass, and made of fine dry grass, very scantily constructed, with a sort of porch made of the seed-heads of grass.

No. 348. ♂ juv. Ravine, Aug. 30, 1896. Bill brown, the lower mandible horny white; feet brownish flesh-colour.

Nos. 427, 428. ♂ juv. Ravine, Nov. 26, 1896. Young birds of the year, moulting. In small flocks.

No. 804. ♂ juv. Lake Naivasha, Aug. 25, 1897.

Nos. 851, 852. ♀ ad. Nandi, 6500 feet, Feb. 11, 1898. Iris brown; bill olive-brown, lower mandible dull whitish horn; feet brown.

No. 894. ♂ juv. Ravine, 7500 feet, March 4, 1898.

32. Pyromelana taha.

Pyromelana taha (Smith); Sharpe, Ibis, 1891, p. 249; Shelley, B. Africa, i. p. 25 (1896).

No. 355. ♂. Ravine, Sept. 15, 1896. Iris brown; bill black the lower mandible somewhat paler; feet shrimp-brown. Breeding. The nest in long grass, like that of *Quelea cardinalis*. I found two nests.

Nos. 356, 358. ♂ juv. Ravine, Sept. 15, 1896. Bill brown, the lower mandible duller, whitish horn; feet brownish horn-blue.

No. 357. ♀ ad. Ravine, Sept. 15, 1896. Bill brown, the lower mandible white; feet pale shrimp-brown.

33. Ploceipasser melanorhyncha.

Ploceipasser melanorhyncha Rüpp.; Sharpe, Ibis, 1891,

p. 250 (Kitua: Machako's); Reichen. Vög. deutsch. Ost-Afrikas, p. 182 (1894); Shelley, B. Africa, i. p. 34 (1896).

No. 247. ♂ ad. Elgeyu, 3700 feet, Aug. 13, 1896. Iris carmine-brown; bill black; feet bluish flesh-colour. Very plentiful and breeding at Njemps.

No. 248. ♂ ad. Elgeyu, 3700 feet, Aug. 13, 1896. Feet flesh-colour.

No. 249. ♀ ad. Elgeyu, 3700 feet, Aug. 13, 1896.

34. PLOCEIPASSER SUPERCILIOSUS.

Ploceipasser superciliosus (Cretzsch.); Shelley, B. Africa, i. p. 34 (1896).

No. 327. ♂ ad. Kamassia, 6000 feet, Aug. 23, 1896. Iris bright brown; bill dusky horn, lower mandible paler; feet brown. First seen.

Nos. 336, 337. ♂ ad. Kamassia, 6500 feet, Aug. 24, 1896. Bill dusky brown; feet pale flesh. Plentiful. Breeding.

35. PHILÆTERUS ARNAUDI.

Philæterus emini (nec Reichen.); Sharpe, Ibis, 1891, p. 249.

Nigrita arnaudi Bp.; Reichen. Vög. deutsch. Ost-Afrikas, p. 185 (1894).

Philæterus arnaudi Shelley, B. Africa, i. p. 27 (1896).

Nos. 304–307. ♂ ♀. Elgeyu, 3700 feet, May 20, 1896. Iris dark crimson; bill black; feet brownish flesh-colour. Breeding. The nest has two entrances, one of which is stopped up when the hen is about to lay. At other times it is used for roosting.

[I have come to the conclusion that all the specimens previously obtained by Mr. Jackson at Machako's were not *P. emini*, but *P. arnaudi*, to which the Elgeyu birds seem certainly to belong.—R. B. S.]

36. QUELEA CARDINALIS.

Quelea cardinalis (Hartl.); Sharpe, Ibis, 1891, p. 251 (Njemps); Reichen. Vög. deutsch. Ost-Afrikas, p.189 (1894: Nguruman, Karema); Shelley, B. Africa, i. p. 26 (1896).

No. 137. ♂ ad. Nandi, 6500 feet, July 1, 1896. Iris brown; bill dusky black; feet brownish flesh-colour. In flocks.

Nos. 128, 129. ♀ imm. Nandi, July 2, 1896. Iris brown; bill olive-brown, with brownish-yellow lower mandible; feet brownish flesh-colour.

Nos. 1218–1224. ♂ ♀ ad. Nandi, June 17, 1898.

37. QUELEA ÆTHIOPICA.

Quelea æthiopica (Sundev.); Sharpe, Cat. B. Brit. Mus. xiii. p. 259 (1890); Salvad. Ann. Mus. Genov. (2) i. p. 177 (1884: Shoa); Shelley, Ibis, 1886, p. 358; Sharpe, Ibis, 1891, p. 250; Shelley, B. Africa, i. p. 26 (1896).

Nos. 94 ♂, 95 ♀, 97, 99. Mbuyuni, Teita, April 5, 1892.

All the specimens are out of plumage, and were shot out of a flock of thirty or forty as they came down to drink at a water-hole in the wilderness. Bill dusky red, lower mandible pale coral-red; eyelids orange; iris brown; feet pale shrimp-brown.

38. SPERMESTES CUCULLATA.

Spermestes cucullata Sw.; Reichen. J. f. O. 1892, p. 46 (Bukoba); id. Vög. deutsch. Ost-Afrikas, p. 184 (1894); Shelley, B. Africa, i. p. 28 (1896).

Nos. 841, 842. ♂. Kakamega, Kavirondo, Feb. 8, 1898. Iris brown; bill black, the lower mandible horn-blue; feet slaty black.

No. 1152. ♀. Nandi, 6500 feet, May 26, 1898.

Now breeding, June 14. Selects old nests of *Hyphantornis reichenowi*, which it lines with fine grass-seed heads. Eggs pure white. Up to date five has been the largest number I found in any nest. Yesterday I found two eggs in a nest of *H. reichenowi*. Both birds were in the nest, and only flew out on my reaching up to the latter, which was in a bush, about seven feet from the ground. The species does not appear to build a nest for itself.

39. SPERMESTES SCUTATA.

Spermestes scutata (Heugl.); Sharpe, Cat. B. Brit. Mus. xiii. p. 265 (1890); Reichen. Vög. deutsch. Ost-Afrikas, p. 184 (1894); Shelley, B. Africa, i. p. 28 (1896).

No. 51. ♂. Kibwezi, 3000 feet, March 12, 1893. Iribrown; bill very dark horn-blue, lower mandible pale horn-blue; feet horn-blue.

This species is very plentiful throughout the country in the vicinity of habitations. At Kibwezi it was breeding in March. The nest, which is roughly made of dry grass and lined with feathers, is generally placed in a table-topped mimosa or other thorny tree, some 10 to 25 feet from the ground. In several cases I have seen the nest within a few inches of a hanging wasps'-nest; and, although I am not certain on the point, I am inclined to think that the birds began building after the wasps had begun their nest, and that they chose to place their nest in such close proximity to the wasps for the sake of protection against the intrusion of snakes, lizards, mice, or other enemies.

40. ORTYGOSPIZA POLYZONA.

Ortygospiza polyzona (Temm.); Reichen. Vög. deutsch. Ost-Afrikas, p. 188 (1894: Wembere Steppes); Shelley, B. Africa, i. p. 28 (1896).

No. 1279. ♀ ad. East of Mau, 6500 feet, Aug. 4, 1898. Iris ochreous; bill coral-pink; feet pinkish flesh-colour. First one seen by me. I found the nest on the ground, hidden in short grass; it was made of coarse grass, lined with very fine grass and a feather or two. Eggs six, white.

41. LAGONOSTICTA RHODOPARIA.

Lagonosticta rhodoparia Heugl.; Sharpe, Cat. B. Brit. Mus. xiii. p. 282 (1890); Reichen. Vög. deutsch. Ost-Afrikas, p. 188 (1894: Dar-es-Salaam); Shelley, B. Africa, i. p. 31 (1896).

No. 145. ♂ ad. Nandi, 6500 feet, July 3, 1896. Iris brown; bill dark horn-blue; feet slate-colour.

No. 948. ♂ ad. Kakamega, Kavirondo, July 4, 1898. Plentiful in the vicinity of the Ichaka river.

42. LAGONOSTICTA JAMESONI.

Lagonosticta jamesoni Shelley, Ibis, 1882, p. 355; Reichen. Vög. deutsch. Ost-Afrikas, p. 188 (1894: Mombasa); Shelley, B. Africa, i. p. 31 (1896).

No. 50. ♂ ad. Kibwezi, 3000 feet, March 12, 1892.

Iris brown; bill dark horn-blue, lower mandible paler; feet dull horn-blue.

[I have compared this specimen with the types in the British Museum, and consider them identical in every respect. The finding of the species at Kibwezi extends its known range considerably.—R. B. S.]

43. AMADINA FASCIATA.

Sporothlastes fasciatus (Gm.); Fischer, Zeitschr. ges. Orn. i. p. 323 (1884: Nguruman); Salvad. Ann. Mus. Genov. (2) p. 179 (1884), vi. p. 283 (1888: Shoa); Reichen. Vög. deutsch. Ost-Afrikas, p. 183 (1894); Shelley, B. Africa, i. p. 26 (1896).

Nos. 78, 81. ♀ ad. Ungarunga, Kinani, April 2, 1892. Bill dark horn-blue; legs flesh-colour; iris pale brown. These specimens, both of which are adult, were also obtained out of a small flock as they came down to drink at a rock-pool, known in East Africa as "Ungarunga," in the bushy wilderness between the river Tsavo and Kibwezi.

44. ZONOGASTRIS MELBA.

Zonogastris melba (L.); Sharpe, Cat. B. Brit. Mus. xiii. p. 296 (1890).

Pitylia melba Reichen. Vög. deutsch. Ost-Afrikas, p. 186 (1894).

Pytelia melba Shelley, B. Africa, i. p. 32 (1896).

No. 42. ♀. Kibwezi, 3000 feet, March 10, 1892. Iris crimson, with a shade of orange; bill dusky crimson; feet pale shrimp-brown.

Nos. 72, 73. ♂ ad. Kibwezi, April 10, 1892. Iris hazel, with crimson tint; bill bright red; feet bluish flesh-colour.

No. 73 was shot as it left its nest, which was built of dry grass very roughly put together, with no extra lining, and placed in a low stunted bush, about 3 feet from the ground. The egg is pure white. This species is fairly plentiful throughout the country.

No. 386. ♂ ad. Njemps, Sept. 26, 1896. Iris bright brown; bill carmine, with the base of the upper mandible black; feet earthy brown. Scarce.

45. Coccopygia kilimensis.

Coccopygia kilimensis Sharpe, Ibis, 1891, p. 250; Shelley, B. Africa, i. p. 29 (1896).

Sporæginthus quartinia (Bp.); Reichen. Vög. deutsch. Ost-Afrikas, p. 188 (1894).

No. 52. ♂ ad. Ravine, March 24, 1896. Iris dark crimson; bill brownish black, lower mandible blood-red; feet brownish black.

No. 615, ♀ ad. Ravine, April 10, 1897. Feet olive-brown.

No. 628. ♀ ad. Ravine, April 14, 1897. Fairly plentiful in small flocks of six to ten.

46. Nigrita schistacea.

Nigrita schistacea Sharpe, Ibis, 1891, p. 118 (Sotik); Shelley, B. Africa, i. p. 27 (1896); Oscar Neum. Orn. MB. vii. p. 63 (1899).

Nigrita sparsimguttata, Reichen. J. f. O. 1892, p. 132; id. Vög. deutsch. Ost-Afrikas, p. 185 (1894: Bukoba); Oscar Neum. Orn. MB. vii. p. 63 (1899).

Nos. 130, 135. ♂. Nandi, 6500 feet, June and July 1896.

No. 134. ♀. Nandi, 6500 feet, July 1, 1896. Iris orange-red; bill and feet black.

No. 848. ♂ ad. Nandi, 6500 feet, Feb. 10, 1898. Iris yellowish brown; bill black; feet dull brown.

No. 1042. ♀ ad. Nandi, 6500 feet, April 26, 1898. Iris ochreous hazel.

Found in the bush bordering forest, and also in the bush inside open forest, where it is generally seen singly or in pairs. I have never seen more than a pair together. When searching for food in the early morning it often favours the tops of the tallest trees, but later on and throughout the day it is mostly found in the bush. So far the only place I have met with it is Nandi, where it appears to be not uncommon both in the vicinity of the Government Station and along the road for some ten miles as far east as Kampi Mawe. Breeds in May. Nest large, made entirely of strips of fine dry bark of pink-flowering large-leaved shoots. One was 7 feet from the ground; another was in a tall tree, 30 feet from the ground. Eggs pure white. Five nestlings taken from a tall tree on the 4th of June, 1898. Bill leaden-grey; wings black, without any spots of grey; gape with four yellow excrescences the size of no. 10 shot. On June 13th I found a nest with six young ones in a tree, 30 feet from the ground.

No. 1098. ♂ ad.	Nandi,	6500 feet,	July 2,	1898.
No. 1258. ♂ ad.	„	„	„	„
No. 1259. ♂ juv.	„	„	„	„

[The presence of the little yellow knobs on the gape of the nestling is interesting, and may be compared with the wattles on the gape of *Poephila gouldiæ,* figured by me in 'Wonders of the Bird World' (p. 116).—R. B. S.]

47. Uroloncha caniceps.

Uroloncha caniceps (Reichen.), Sharpe, Cat. B. Brit. Mus. xiii. p. 356 (1890); id. Ibis, 1891, p. 251.

Nos. 82–85. ♀ juv. Muto Ndai; Ngarunga Kiukiu, April 2, 1892. I think these are immature birds, as they have scarcely any white spots on the throat or sides of the face. These two specimens were obtained out of a small flock at a pool in the wilderness between the river Tsavo and Kibwezi, and were the first I have ever seen in this part of the country. The feet are dark horn-blue; the bill also dark horn-blue, the lower mandible being a little paler. Iris brown.

48. Estrilda minor.

Estrilda minor (Cab.); Sharpe, Ibis, 1891, p. 251; Reichen. J. f. O. 1892, p. 48; id. Vög. deutsch. Ost-Afrikas, p. 187 (1894).

Nos. 496–504. ♂ ♀ ad. Ravine, March 2, 1897. Iris brown; bill vermilion or bright coral-red; feet brownish black. Very plentiful. Goes about in flocks of from eight to ten individuals, perhaps a family-party, and is sometimes to the number of one hundred or more. It keeps up a constant twitter when on the wing, but is quiet when feeding, its food consisting of small grass-seeds. It makes a nest of fine grass, very compact, lined with a few feathers. Eggs white. It is partial to the vicinity of habitations. The crops of all these birds were full of small, soft, evidently unripe grass-seeds, which had a disagreeable, sickly smell.

No. 1232. ♂ ad. Nandi, 6000 feet, June 23, 1898.

49. Estrilda nonnula.

Estrilda nonnula Hartl.; Sharpe, Cat. B. Brit. Mus. xiii. pp. 400, 669 (1890); Shelley, B. Africa, i. p. 30 (1896).

Estrilda tenerrima Reichen. J. f. O. 1892, p. 47; id. Vög. deutsch. Ost-Afrikas, p. 187 (Karágwe; Bukoba).

No. 849. ♂. Nandi forest, 6000 feet, Feb. 10, 1898. Iris brown; bill black, with a crimson streak on both sides of the culmen; base of lower mandible also crimson; feet black.

Nos. 1051, 1053, 1060, 1061. ♂ ♀. Nandi, 6500 feet, April 30 to May 4, 1898.

50. Estrilda phœnicotis.

Estrilda phœnicotis Sw.; Sharpe, Cat. B. Brit. Mus. xiii. p. 400 (1890); id. Ibis, 1891, p. 251.

No. 61. ♂. Kibwezi, 3000 feet, March 16, 1892. Iris pale brown; bill unripe plum-colour, the tip darker; feet pale shrimp-brown.

This pretty little bird is found everywhere in the country. Its nest is made of dry grass, and is found in various positions, such as in a low bush, in a mimosa- or acacia-tree, 30 feet from the ground, in the thatch of a native hut, or in the deserted nest of the common Yellow Weaver-bird.

51. Granatina ianthinogaster.

Granatina ianthinogaster (Reichen.); Sharpe, Cat. B. Brit. Mus. xiii. p. 404 (1890); Reichen. Vög. deutsch. Ost-Afrikas, p. 186 (1894); Shelley, B. Africa, i. p. 29 (1896).

No. 63. ♂ ad. Lake Naivasha, April 6, 1896. Iris Indian-red; eyelids red; bill crimson, darker at base; feet black.

Nos. 770, 771. ♂ ad. Lake Naivasha, Aug. 14, 1898.
No. 810. ♀ ad. ,, ,, Aug. 27, 1897.

[All these specimens belong to the true dark-coloured *G. ianthinogaster*, and are easily distinguishable from *G. hawkeri* Lort Phillips, from Somaliland.—R. B. S.]

52. ICTEROPSIS PELZELNI.

Icteropsis pelzelni (Hartl.); Sharpe, Cat. B. Brit. Mus. xiii. p. 410 (1890).

Ploceus pelzelni Reichen. J. f. O. 1892, p. 44 (Victoria Nyanza); id. Vög. deutsch. Ost-Afrikas, p. 179 (1894).

Sitagra pelzelni Shelley, B. Africa, i. p. 38 (1896).

a, b. ♂; *c.* ♀ ad. Ntebi, April 25, 1895. Bill black; iris dark grey; feet horn-blue.

d. ♀ juv. Ntebi, April 25, 1895. Bill dark horn-colour, nearly black.

53. ANAPLECTES MELANOTIS.

Anaplectes melanotis (Lafr.); Sharpe, Cat. B. Brit. Mus. xiii. p. 413 (1890); Reichen. Vög. deutsch. Ost-Afrikas, p. 183, fig. 84 (1894).

No. 8. ♂. Mt. Maungu, Teita, Dec. 31, 1891. Bill dull carmine; iris brown; feet flesh-colour. This bird is decidedly scarce, and I have seen it in Teita only on two or three occasions, and then only single specimens.

No. 286. ♂ ad. Elgeyu, 3700 feet, Aug. 18, 1896. Iris brown; bill orange-red; feet bluish flesh-colour.

No. 340. ♂ juv. Kamassia, 6500 feet, Aug. 24, 1896. Iris crimson-brown; bill pale orange; feet pale horn-blue. Scarce.

[The young male differs from the adult in having the head ashy brown like the back, with a few red feathers here and there. The sides of the face and the ear-coverts are ashy brown, with a few black feathers intermingled; and the under surface of the body is white, more ashy on the throat and chest, which show a few rose-coloured feathers, and there is a little black developing on the chin. From this specimen it would appear that the absence of black on the chin is a sign of immaturity. Dr. Reichenow's figure (*l. c.*) lacks the black on the throat, which one would expect to be an oversight on the part of the artist, as the bird figured is evidently perfectly adult.—R. B. S.]

54. HETERHYPHANTES REICHENOWI.

Heterhyphantes reichenowi (Fischer); Sharpe, Ibis, 1891, p. 252 (Savé, Mt. Elgon; Elgeyu; Kikuyu).

Symplectes reichenowi Reichen. Vög. deutsch. Ost-Afrikas, p. 179 (1894).

Othyphantes reichenowi Shelley, B. Africa, i. p. 37 (1896).

a. ♂ juv. Kampala, March 19, 1895. Iris straw-colour; bill black; feet brownish flesh-colour.

No. 142. ♂ ad. Nandi, 6500 feet, July 3, 1896. Soft parts as above.

Nos. 156, 157. ♂ ♀ ad. Nandi, July 6, 1896. Nest like that of the common Yellow Weaver-bird, in a small tree like a mountain ash, about ten feet from the ground. Three eggs, white, with large rusty-brown spots.

No. 165. ♀ imm. Nandi, July 8, 1896. Bill dusky horn-colour, the lower mandible horny white at base.

No. 1143. ♂ ad. Nandi, May 24, 1898. The nests vary in size, some being much more compact than others. They are made entirely of grass, mostly green, but it soon becomes dry. The ceiling is composed of green grass-seed heads beautifully arranged, and the floor where the eggs rest is also lined with seed-heads, and very often with soft down of groundsel and thistles. Most of the eggs were very much incubated by the end of June; many of the nests contained young.

No. 1151. ♀ ad. Nandi, May 26, 1898. Breeding. Nest with three blue eggs, no spots, much incubated; another with young. Nest woven on to the stem of a low tree or bush, not suspended to ends of twigs, made of a coarse grass, lined with seed-heads, which form the roof and porch.

No. 478. ♂ ad. Ravine, 7500 feet, Feb. 23, 1897. Very plentiful. Seen singly and two or three together, sometimes as many as eight or ten, but this, I think, is only for a short time after the breeding-season.

No. 479. ♀ ad. Ravine, Feb. 23, 1897.

No. 556. ♀ imm. Ravine, March 25, 1897. Iris straw-colour; bill dark brown, lower mandible horn-white; feet olive-brown. Very plentiful.

No. 603. ♀ ad. Ravine, April 3, 1897.

No. 698. ♂ ad. „ July 26, 1897.

No. 1172. ♀ ad. Nandi, 6500 feet, May 30, 1898. Nest with two eggs, blue, with large brown spots.

No. 1278. ♂ juv. Ravine, Aug. 2, 1898.

[Young birds are olive-yellowish above, with broad streaks of dark brown or black on the back; the crown uniform olive-yellow, as also the sides of the face and neck, these being slightly darker; the entire under surface of the body is yellow, inclining to orange on the throat and chest. Such is the plumage of specimens procured in August. In March and July (when *fully adult* birds were also obtained) Mr. Jackson got some assuming a black head, but otherwise in the plumage of the young bird with the back streaked. Is it possible that there can be a striped winter-dress for this Weaver-bird?—R. B. S.]

55. HETERHYPHANTES NIGRICOLLIS.

Heterhyphantes nigricollis (Vieill.); Sharpe, Cat. B. Brit. Mus. xiii. p. 415 (1890); Shelley, B. Africa, i. p. 37 (1896).

Symplectes nigricollis Reichen. J. f. O. 1892, p. 42 (Bukoba); id. Vög. deutsch. Ost-Afrikas, p. 179 (1894).

No. 946. ♂ ad. Kakamega, Kavirondo, April 7, 1898. Iris brown; bill black; feet horn-blue. The only one seen, near Clarke's bridge, Ichaka river.

56. HETERHYPHANTES STEPHANOPHORUS

Heterhyphantes stephanophorus Sharpe, Ibis, 1891, pp. 117, 253, pl. vi. fig. 2; Shelley, B. Africa, i. p. 37 (1896).

No. 1145. ♂. Nandi, 6500 feet, May 24, 1898. Iris dark crimson; bill black; feet very dark slate-colour.

No. 1268. ♂. Nandi, July 4, 1898.

[Both these specimens, marked males, agree with the type, which is also a male.—R. B. S.]

57. HETERHYPHANTES MELANOGASTER.

Heterhyphantes melanogaster (Shelley); Sharpe, Cat. B. Brit. Mus. xiii. p. 417 (1890); Shelley, B. Africa, i. p. 37 (1896).

No. 113. ♂ imm. Ravine, June 23, 1896. Iris dark crimson; bill black; feet horny blue.

No. 701. ♂ imm. Ravine, July 27, 1897. Feet brown-blue; bill black, the lower mandible dusky horny white.

No. 962. ♀ juv. Nandi forest, 6500 feet, April 10, 1898. Iris brown; bill dusky brown, lower mandible horny white; feet slate-colour.

No. 1030. ♂ ad. Nandi, 6500 feet, April 24, 1898. Iris crimson; bill black; feet slate-colour. Fairly plentiful. The stomach contained caterpillars and insects.

[No. 962 is evidently immature. It is sooty black above, the head also blackish, but mottled with dull orange bases to the feathers, the commencement of the full plumage. The sides of the face are more distinctly yellow, and the throat approaches a uniform dull orange. The rest of the under surface is ashy, tinged with yellow, and the fore-neck is rather blacker. The wing-margin is yellowish, and this character persists in a male bird (July 27), which is black, with the yellow forehead, face, and throat of the adult, but has the breast intermingled with the olive-yellow plumage of the immature bird. Another male (June 23rd) is quite adult, except for a few black feathers on the yellow throat, which looks as if the species were black-throated at some stage, like *H. stephanophorus.* Lastly, there is a male from Nandi (April 24) which agrees with the type of *H. melanogaster* from the Cameroons, and has a yellow throat and face. This type is also said to be a male, but nevertheless I expect that, when careful observation is made, it will be found that *H. melanogaster* is the female of *H. stephanophorus*, and the latter name will have to be dropped.—R. B. S.]

58. SYCOBROTUS INSIGNIS.

Sycobrotus insignis Sharpe, Ibis, 1891, pp. 117, 253, pl. vi. fig. 1; id. Bull. B. O. C. vi. p. iv, err. (1897).

Symplectes croconotus Reichen. J. f. O. 1892, p. 186; Sjöstedt, Svenska Ak. Handl. xxvii. no. 1, taf. ix. (1895).

Heterhyphantes stephanophorus Sharpe, Bull. B. O. C. vi. p. xliii, 1897, *lapsu cal.*

No. 117. ♂. Ravine, June 24, 1896. Iris crimson-brown; bill black; feet bluish flesh-colour. The first observed by me.

No. 118. ♀. Ravine, June 24, 1896. Soft parts as in the male.

Nos. 128, 129. ♂ ♀. Nandi, 6500 feet, June 29, 1896.

No. 544. ♂. Ravine, March 20, 1897. Iris crimson-brown; bill black; feet brown. Found nearly always in pairs. In habits these Weaver-birds much resemble our Goldfinch, being found in high trees, and twisting and turning into all sorts of positions in search of their insect-food. The stomach contained beetles, insects, &c., but no grains or seeds.

No. 970. ♂. Nandi, 6500 feet, June 13, 1896. Feet pale brown. Always in pairs. Climbs about big stems and branches like a Tit.

No. 991. ♀ ad. Nandi, 6500 feet. April 15, 1898.

Nos. 1085, 1086. ♂ ad. Nandi, May 9, 1898. Feet pale brown, with a slaty tint.

No. 1154. ♀. Nandi, May 26, 1898. Breeding. Nest made of corkscrew-like tendrils of convolvuli, with long retort-shaped spout, woven on to the under side of a branch of a thorn-tree, but not suspended from the end of a branch. Eggs two, pale blue.

No. 1276. ♂ juv. Nandi, July 7, 1898. Iris brown; bill dusky horn-colour, the lower mandible whitish horn; feet pale slaty-brown. The stomach contained the remains of what appeared to be ants and other insects.

[One of the most interesting of Mr. Jackson's discoveries in the field has been that this black-and-yellow Weaver has a chestnut-headed male, which appears to me to be *Symplectes croconotus* of Sjöstedt, hitherto known only from the Cameroons. In mentioning this fact in 1897, I accidentally referred to the species as *Heterhyphantes stephanophorus*, from a too hasty examination of the numbers on the plate in 'The Ibis' for 1891. The young male procured on the 7th of July resembles the adult female, but has the black wing-coverts edged with yellow, and the yellow of the back is paler, the entire under surface of the body being pale lemon-yellow. The crown and sides of the head are olive-green with black feathers intermingled, showing that, in its first full plumage, the head is black, like that of the old female. Even in adult males the amount of black on the throat varies, and in one of them the throat is entirely yellow.—R. B. S.]

59. SYCOBROTUS NANDENSIS, sp. n.

Similis *S. amaurocephalo* Cab., sed suprà schistacea, pileo undique gulaque nigerrimis. Long. tot. 5·5 poll., culm. 0·7, alæ 3·15, caudæ 2·1, tarsi 0·95.

No. 961. ♀. Nandi, 6000 feet, April 10, 1896. Iris dull crimson; bill horn-blue, with the tip black; feet flesh-colour.

[Compared with Prof. Cabanis's description and figure of *S. amaurocephalus* (J. f. O. 1880, p. 349, pl. 31. fig. 1), Mr. Jackson's Nandi bird is very much greyer, and has the head and throat entirely black. In this respect it also differs from the specimen of *S. amaurocephalus,* also a female, collected by Mr. McCloun in Nyasaland (*cf.* Shelley, Ibis, 1899, p. 368), which agrees with Cabanis's description and has a brownish back, and a blackish-brown head and throat; it is also slightly larger (wing 3·4) than the Nandi specimen. The latter has the centre of the fore-neck mottled with black bases to the feathers, a feature only slightly indicated in *S. amaurocephalus.*—R. B. S.]

60 SITAGRA LUTEOLA.

Sitagra luteola (Licht.); Sharpe, Cat. B. Brit. Mus. xiii. p. 425 (1890); Shelley, B. Africa, i. p. 38 (1896).

No. 252. ♀. Elgeyu, 3700 feet, Aug. 13, 1896. Iris hazel; bill black; feet pale horn-blue. Breeding. Nest with a long pipe to the entrance.

No. 293. ♂. Elgeyu, Aug. 18, 1896. Iris pinkish brown; bill black; feet pale horn-blue.

No. 294. ♀. Elgeyu, Aug. 18, 1896. Iris yellowish brown; bill dusky black; feet pale horn-blue.

No. 366. ♀. Guasa Molo valley, Sept. 19, 1896. Iris pale crimson-brown; bill and feet dusky horn-blue.

No. 375. ♂ ad. Njemps, Sept. 20, 1896. Iris yellowish brown; bill black; feet horn-blue.

61. Hyphantornis abyssinicus.

Hyphantornis abyssinicus (Gm.); Sharpe, Ibis, 1891, p. 253 (Elgeyu); Shelley, B. Africa, i. p. 40 (1896).

a. ♂. Kampala, March 18, 1895. Iris crimson; bill black; feet brownish flesh.

b. ♀. Kampala, March 19, 1895. Iris brown; bill black, lower mandible dusky whitish horn; feet dusky brown.

62. Hyphantornis nigriceps.

Hyphantornis nigriceps Layard, Sharpe, Ibis, 1891, p. 253.

Ploceus nigriceps Reichen. J. f. O. 1892, p. 43.

No. 67. ♂. Kibwezi, 3000 feet, March 18, 1892. Iris crimson; feet flesh-colour, with brownish tint; bill black.

Very plentiful throughout the country. I have noticed that this Weaver builds its nest very much higher from the ground than most other Weavers. At Kibwezi there was a colony breeding in a tall acacia-tree, some 40 to 50 feet from the ground. I have also seen other colonies at Witu, on the coast, which had chosen the top of a tall cotton-wood tree for their nests, which were placed some 80 to 90 feet above the ground.

63. Hyphantornis jacksoni.

Hyphantornis jacksoni Shelley; Sharpe, Ibis, 1891, p. 253 (Kilimanjaro); Reichen. Vög. deutsch. Ost-Afrikas, p. 180 (1894: Aruscha; Kagéyi); Shelley, B. Africa, i. p. 40 (1896).

a, b. ♂ ad. Ntebi, March 3, 1895. Iris crimson, with orange tint; bill black; feet shrimp-brown.

64. Hyphantornis vitellinus.

Hyphantornis vitellinus (Licht.), Sharpe, Ibis, 1891, p. 254 (Kamassia); Shelley, B. Africa, i. p. 39 (1896).

a, b, c. ♀ ad. et juv. Ntebi, March 3, 1895. Iris pale crimson-brown; bill dusky, lower mandible whitish yellow; feet pale fleshy brown.

No. 251. ♀ ad. Elgeyu, 3700 feet, Aug. 13, 1896. Iris brown; bill brown, the lower mandible white; feet brownish flesh-colour. Breeding. Found the nest and eggs.

No. 292. ♂ ad. Elgeyu, Aug. 18, 1896. Iris orange-red; bill black; feet flesh-colour. Breeding in small colonies.

65. HYPHANTORNIS SPEKII.

Hyphantornis spekii Heugl., Sharpe, Ibis, 1891, p. 254 (Machako's); Shelley, B. Africa, i. p. 39 (1896).

No. 58. ♂. River Morandat, Lake Naivasha, April 4, 1896. Iris orange; bill black; feet brown.

66. CINNAMOPTERYX RUBIGINOSA.

Cinnamopteryx rubiginosa (Rüpp.); Sharpe, Ibis, 1891, p. 254.

♂. Ngarunga, Kinani, January 27, 1893. Bill black; feet brown; iris brown.

This bird is decidedly local, and I have met with it only in a very few places. At Njemps, near Lake Baringo, in July 1890, I found it breeding in enormous numbers in the thorn-trees.

67. MALIMBUS RUBRICOLLIS.

Malimbus rubricollis (Swains.); Sharpe, Cat. B. Brit. Mus. xiii. p. 478 (1890); id. Bull. B. O. C. vi. p. xlviii (1897: Ntebi).

Ad. Ntebi, July 10, 1895. Iris brown; bill and feet black.

68. MELANOPTERYX NIGERRIMA.

Melanopteryx nigerrima (Vieill.); Sharpe, Cat. B. Brit. Mus. xiii. p. 476 (1890); Shelley, B. Africa, i. p. 35 (1896).

Ploceus nigerrimus Reichen. J. f. O. 1892, p. 43 (Bukoba; Ntebi; Sesse Isl.); id. Vög. deutsch. Ost-Afrikas, p. 181 (1894: Bukoba).

a. ♂. Ntebi, April 24, 1895.

b. ♂ imm. Ntebi, May 8, 1895. Iris white-straw-colour; feet shrimp-brown.

69. SPERMOSPIZA RUBRICAPILLA.

Spermospiza rubricapilla Shelley; Sharpe, Cat. B. Brit. Mus. xiii. p. 500, pl. xv. (1890).

No. 988. ♀ ad. Nandi, 6500 feet, April 13, 1898. Iris brown; bill dull indigo-blue, with orange-brown edges to both mandibles; feet olive-black. First one seen; it was in thick bush in the belt of forest.

70. AMBLYOSPIZA MELANONOTA.

Amblyospiza melanonota (Heugl.); Sharpe, Cat. B. Brit. Mus. xiii. p. 504 (1890).

Amblyospiza melanota Shelley, B. Africa, i. p. 33 (1896).

a. ♂. Ntebi, May 10, 1895. Iris brown; bill black; feet dark slate-colour.

No. 1022. ♂ ad. Nandi, 6500 feet, April 22, 1898. Iris brown; bill black; feet olive-black. Breeding in a marsh.

No. 1091. ♀. Nandi, May 9, 1898. Iris brown; bill brownish black, the lower mandible dusky greenish horn-colour; feet brownish-black.

[These specimens are identical with Emin Pasha's birds from Majungo in the British Museum. They are not *A. capitalba,* which Prof. Reichenow (Vög. deutsch. Ost-Afrikas, p. 182) has recorded from Bukoba.—R. B. S.]

71. DINEMELLIA DINEMELLI.

Dinemellia dinemelli (Rüpp.); Sharpe, Ibis, 1891, p. 255 (Batzsuma, Teita); Reichen. Vög. deutsch. Ost-Afrikas, p. 178 (1894) (Kilimanjaro); Shelley, B. Africa, i. p. 33 (1896).

No. 280. ♂. Elgeyu, 3700 feet, Aug. 16, 1896. Iris brown; bill dark horn- or lead-colour; feet brownish flesh-colour. Fairly plentiful; also seen near Njemps.

72. TEXTOR ALBIROSTRIS.

Textor albirostris (Vieill.); Sharpe, Cat. B. Brit. Mus. xiii. p. 508 (1890).

Nos. 378, 379. ♂. Njemps, Sept. 20, 1896. Iris brown; bill black, with greenish-yellow base; feet pale slate-colour. These are the first I have seen of this species; they were breeding. The nest was a large mass of black thorns, three or four nests being clustered together; all with three eggs.

Fam. FRINGILLIDÆ.

73. CHRYSOMITRIS MELANOPS.

Chrysomitris melanops (Heugl.); Sharpe, Cat. B. Brit. Mus. xii. p. 229 (1888); Reichen, Vög. deutsch. Ost-Afrikas, p. 197 (1894).

No. 923. ♀. Nandi, 6000 feet, March 21, 1898. Iris brown; bill horn-colour, the lower mandible horny white; feet brown. Suaheli name "Chiriko."

No. 1200. ♀. Nandi, 6500 feet, June 11, 1898. Iris brown; bill pale brown, the lower mandible dusky white; feet olive-brown. Scarce; observed in pairs.

74. PASSER SWAINSONI.

Passer swainsoni (Rüpp.); Sharpe, Ibis, 1891, p. 257 (Ulu); Shelley, B. Africa, i. p. 20 (1896).

No. 34. ♀. Kibwezi, March 7, 1892. This is the common Sparrow of the country.

No. 298. ♀ Elgeyu, 3700 feet, Aug. 19, 1896. Iris hazel; bill black; feet pale brown. Plentiful.

75. PASSER DIFFUSUS.

Passer diffusus (Smith); Reichen. J. f. O. 1892, p. 50 (Uganda); id. Vög. deutsch. Ost-Afrikas, p. 195 (1894); Shelley, B. Africa, i. p. 20 (1896).

No. 48. ♀. Ntebi, Oct. 2, 1895. Iris hazel; bill dusky horn; feet dusky brown.

No. 1095. ♀. Nandi, 6500 feet, May 10, 1898. Iris brown; bill slaty black; feet brown.

76. PASSER EMINI.

Passer emini (Hartl.); Sharpe, Ibis, 1891, p. 257 (Njemps); Shelley, B. Africa, i. p. 20 (1896).

Sorella emini Reichen. Vög. deutsch. Ost-Afrikas, p. 196 (1894).

No. 309. ♂ imm. Elgeyu, 3700 feet, Aug. 20, 1896. Iris brown; bill dusky black; feet brownish flesh-colour. Fairly plentiful.

Nos. 364, 365. ♀ ad. Guasa Molo river, Sept. 19, 1896. Iris brown; bill dusky brown; feet flesh-colour, with a bluish tint or greenish horn-colour.

77. PETRONIA PYRGITA.

Petronia pyrgita (Heugl.); Sharpe, Cat. B. Brit. Mus. xii. p. 296 (1888); Reichen. Vög. deutsch. Ost-Afrikas, p. 195 (1894); Shelley, B. Africa, i. p. 19 (1896).

No. 468. ♀. Ravine, Feb. 19, 1897. Iris light brown;

bill pale dusky brown, the lower mandible dusky white; feet pale horn-blue. The only one seen by me; it was hopping about on the ground, and resembled a Sparrow in its habits.

78. POLIOSPIZA REICHARDI.

Poliospiza reichardi Reichen. J. f. O. 1882, p. 209; id. Vög. deutsch. Ost-Afrikas, p. 196 (1894); Shelley, B. Africa, i. p. 21 (1896).

Poliospiza striatipectus Sharpe, Ibis, 1891, p. 258 (Elgeyu); Shelley, B. Africa, i. p. 21 (1896).

Nos. 321, 329. ♂. Kamassia, 6500 feet, Aug. 23–24, 1896.

79. SERINUS SULPHURATUS.

Serinus sulphuratus (Linn.); Sharpe, Cat. B. Brit. Mus. xiii. p. 349 (1890); Reichen. Vög. deutsch. Ost-Afrikas, p. 196 (1894); Shelley, B. Africa, i. p. 22 (1896).

Crithagra sulphurata Reichen. J. f. O. 1892, p. 72 (Lake Victoria).

No. 505. ♀ ad. Ravine, March 3, 1897. Iris brown; bill pale horn-brown, lower mandible dusky horn-white; feet brown. Scarce. Found this bird feeding on young shoots of a bush.

No. 514. ♂ ad. Ravine, March 6, 1897. Stomach and crop contained minute seeds.

No. 685. ♂ ad. Ravine, July 23, 1897.

Nos. 686, 687. ♂ ♀ ad. Ravine, July 23, 1897.

No. 703. ♂ ad. Ravine, July 27, 1897.

Nos. 725, 725 *a*. ♀ ♂ ad. Lake Naivasha, Aug. 6, 1898.

80. SERINUS BARBATUS.

Crithagra barbata Heugl. J. f. O. 1864, p. 248.

Serinus icterus (pt.) Sharpe, Cat. B. Brit. Mus. xii. p. 356 (1888).

No. 53. ♂. Ntebi, Oct. 3, 1895. Iris brown; bill dusky horn-colour; feet brown.

81. SERINUS AFFINIS.

Serinus striolatus (nec Rüpp.); Sharpe, Ibis, 1891, p. 258; Shelley, B. Africa, i. p. 22 (1896).

Poliospiza striolata (nec Rüpp.); Reichen. Vög. deutsch. Ost-Afrikas, p. 196 (1894).

Crithagra striolata affinis Richmond, Auk, xiv. p. 157 (1897).

No. 50. ♀ ad. Ravine, March 24, 1896. Iris hazel; bill brown, lower mandible dusky white; feet brown. Fairly plentiful, in pairs.

No. 153. ♂ ad. Nandi, 6500 feet, July 5, 1896. Iris brown; bill horn-brown; feet brown.

No. 170. ♀ ad. Nandi, 8500 feet, July 11, 1896.

Nos. 185, 186. ♀ ad. Ravine, July 21, 1896.

No. 193. ♀ ad. Ravine, July 23, 1896. Breeding in July.

No. 448. ♀ ad. Kikuyu, Jan. 31, 1897. Breeding. Nest in bush, 3 feet from the ground. Three eggs, like Bullfinch.

No. 1062. ♀ ad. Nandi, 6500 feet, May 4, 1898.

Not nearly so plentiful in Nandi as might have been expected, since the elevation and character of the country are so similar to those of the Ravine, where the bird is so common.

Nos. 1099, 1100. ♂ ad. Nandi, May 12, 1898.

No. 1137. ♂ ad. Nandi, May 23, 1898.

No. 1267. ♀ ad. Nandi, July 3, 1898.

[Mr. Jackson's series shows a more buff-coloured under surface than in the Abyssinian birds, which are white below. The larger size of the latter, as mentioned by Mr. Richmond, does not amount to much, and the actual differences between *Serinus affinis* and *S. striolatus* are very small.—R. B. S.]

82. SERINUS ALBIFRONS.

Crithagra albifrons Sharpe, Ibis, 1891, pp. 118, 255.

Serinus albifrons Shelley, B. Africa, i. p. 22 (1896).

No. 30. ♂ ad. Ravine, March 8, 1896. Iris bright brown; bill dusky horn-brown, upper edges of lower mandible paler, fading into white underneath; feet brown. Appears to be fairly plentiful.

No. 44. ♂ ad. Ravine, March 21, 1896. Iris bright crimson-brown.

No. 208. Ad.
No. 209. ♀ ad. } Ravine, July 31, 1896.
No. 210. ♂ ad.

No. 542. ♂ imm. Ravine, March 19, 1897. Bill olive-brown.

No. 585. ♂ ad. Ravine, March 30, 1897.

Nos. 657, 658. ♀ ♂ ad. Ravine, July 16, 1897.

No. 899. ♀ imm. Ravine, 7500 feet, March 5, 1898.

Nos. 1244, 1244*a*. ♂ ♀ ad. Nandi, 6500 feet, June 26, 1898.

No. 1247. ♀ ad. Nandi, 6500 feet, June 27, 1898.

[The series now sent by Mr. Jackson shows that the two typical specimens, described by me in 1891, were both young birds. The white patch on the cheeks and the white markings on the throat become nearly or entirely obsolete with age, so that these cannot be regarded as specific characters. The white forehead also disappears with age, and the head becomes like the back. The only differences between *S. albifrons* and *S. burtoni* consist in the more uniform appearance of the upper surface and the narrower and browner stripes on the sides of the body. In *S. burtoni* the upper surface is mottled with dark brown centres to the feathers, and the streaks on the flanks are black and very broad.

The name of *S. albifrons* is certainly unfortunate, having been founded on characters peculiar to the young bird. It has also apparently misled Mr. C. W. Richmond, who has compared specimens from Kilimanjaro with the description of my *C. albifrons* and has named Dr. Abbott's bird *Crithagra kilimensis*. I am afraid that *Serinus kilimensis* (Richmond) is only the adult bird of my *C. albifrons*.—R. B. S.]

83. SERINUS REICHENOWI.

Serinus reichenowi Salvad.; Shelley, B. Africa, i. p. 22 (1896).

Poliospiza reichenowi Reichen. Vög. deutsch. Ost-Afrikas, p. 196 (1894).

Serinus fagani Sharpe, Bull. B. O. C. vi. p. vii (1896). Machako's.

a. ♂ ad. Machako's, Oct. 4, 1895. Bill dusky horn; feet shrimp-brown.

No. 275. ♂ ad. Elgeyu, 3700 feet, Aug. 16, 1896. Iris brown; bill brown, lower mandible horny white; feet flesh-brown. In flocks and fairly plentiful.

No. 367. ♀ ad. Guasa Molo river, Sept. 1896. Shot for identification as it flew off its nest. Nest very small, on branch of bush, about 6 inches from the ground. Egg (only one) like a Linnet's.

[There can be no doubt that my *Serinus fagani* is the same as *S. reichenowi*, of which we have lately received a specimen from Mpapwa, presented by the Berlin Museum.—R. B. S.]

84. SERINUS DORSOSTRIATUS.

Crithagra dorsostriata Reich. J. f. O. 1892, p. 72 (Kagehi, Wembaeze).

Serinus dorsostriatus (Reichen.); id. Vög. deutsch. Ost-Afrikas, p. 196 (1894); Shelley, B. Africa, i. p. 22 (1896).

No. 295. ♂. Elgeyu, 3700 feet, Aug. 18, 1896.

[This species is very similar to the adult male of *S. maculicollis*, but has bright yellowish ear-coverts and a scarcely defined moustachial streak, whereas in *S. maculicollis* the ear-coverts and moustachial streak are very dark greenish. Count Salvadori's *Serinus xantholæma* (Ann. Mus. Genov. (2) xvi. p. 44) from Somaliland seems to me to be also referable to *S. maculicollis*.—R. B. S.]

85. EMBERIZA FLAVIVENTRIS.

Emberiza flaviventris (Bonn. & Vieill.); Sharpe, Ibis, 1891, p. 259 (Kamassia); Reichen. J. f. O. 1892, p. 50 (Uganda); id. Vög. deutsch. Ost-Afrikas, p. 194 (1894); Shelley, B. Africa, i. p. 18 (1896).

No. 206. ♂ ad. Ravine, July 30, 1896. Iris brown; bill dark brown, lower mandible horny white, with a fleshy tint; feet pale horn-blue. The first one seen at the Ravine.

No. 324. ♂ ad. Kamassia, Aug. 23, 1896. Nest in thorn (mimosa) bush, 3 feet from the ground, made of grass, lined with fine fibrous roots. Eggs two, white, with circle of black "bunting" marks at basal end.

Fam. ALAUDIDÆ.

86. TEPHROCORYS CINEREA.

Tephrocorys cinerea (Gm.); Sharpe, Ibis, 1871, p. 260; Shelley, B. Africa, i. p. 14 (1896).

Nos. 59, 60. ♀ ♂ ad. Lake Naivasha, April 4, 1896. Iris brown; bill brownish horn, lower mandible whitish horn; feet brown.

Nos. 727, 728. ♂ ad. Lake Naivasha, Aug. 6, 1897.

87. MIRAFRA AFRICANA.

Mirafra africana Smith; Sharpe, Ibis, 1891, p. 260 (Ukambani); Reichen. J. f. O. 1892, p. 52 (Bussissi); id. Vög. deutsch. Ost-Afrikas, p. 202 (1894); Shelley, B. Africa, i. p. 16 (1896).

No. 55. ♂ ad. Lake Nakuru, April 1, 1896. Iris hazel; bill brown, lower mandible horny white; feet flesh-colour.

No. 70. ♀ ad. Lake Naivasha, April 20, 1896. Found the nest in a tuft of grass, built entirely of fine dry grasses. Two eggs, one much paler and with smaller spots than the other.

No. 32. ♂ ad. Ntebi, Sept. 24, 1895.

No. 66. ♂ ad. Ntebi, Oct. 8, 1895. Iris bright hazel; feet fleshy brown.

No. 726. ♀ ad. Lake Naivasha, 6000 feet, Aug. 6, 1897.

No. 734. ♀ imm. Lake Naivasha, 6000 feet, Aug. 7, 1897.

Nos. 740, 741, 742. ♂ ad. Lake Naivasha, Aug. 8, 1897.

[The large series of the present species sent by Mr. Jackson shows great variation in tint and markings, and the rufous occipital patch is more distinct in some examples than in others. I was at one time disposed to regard *Spilocorydon hypermetrus* of Reichenow as identical with *Mirafra africana*, but in 1898 Dr. Reichenow brought the type of his species to England, and I was able to compare the two birds. The bill of *Spilocorydon* looks larger than in *M. africana,* but this difference is more apparent than real. The culmen is slightly longer than the middle toe and claw, and there is a conspicuous black patch at the side of the neck. The type measured as follows:—Total length 8 inches, culmen 1·0, wing 4·3, tail 2·95, tarsus 1·4; first primary 1·5.

On recomparing a Shoa specimen of *Spilocorydon* with the series of *M. africana,* I notice that the general tint of its colour is more ashy-brown, especially the inner secondaries and inner greater coverts, as well as the tail. The length of the tail appears to be the easiest character for the recognition of *Spilocorydon* from *Mirafra,* for whereas *M. africana* never has the tail longer than 2·7 inches, the Shoa specimen of *Spilocorydon hypermetrus* and two skins collected by Lord Lovat have the tail 3·4 inches.—R. B. S.]

88. PYRRHULAUDA LEUCOPAREIA.

Pyrrhulauda leucopareia (Fischer & Reichen.); Sharpe, Cat. B. Brit. Mus. xiii. p. 651 (1890); Reichen. Vög. deutsch. Ost-Afrikas, p. 204 (1894); Shelley, B. Africa, i. p. 17 (1896).

No. 381. ♂. Njemps, Sept. 21, 1896. Iris brown; bill bluish white; feet dusky flesh-colour. Now in pairs in the open sandy places round Njemps.

Fam. MOTACILLIDÆ.

89. MOTACILLA ALBA.

Motacilla alba Linn.; Sharpe, Cat. B. Brit. Mus. x. p. 464 (1885); Shelley, B. Africa, i. p. 11 (1896).

Nos. 855, 856. ♀ ad. et juv. Mumias, Feb. 5, 1898.

Nos. 887, 888. ♀ ad. Ravine, 7500 feet, Feb. 25, 1898. This is the first time I have seen any species of Wagtail at the Ravine.

[The specimens obtained by Mr. Jackson increase our knowledge of the winter range of the White Wagtail, which was previously known from Sokotra and Somaliland, but had not been recorded from Equatorial Africa. The specimens are all moulting into the spring plumage.—R. B. S.]

90. MOTACILLA VIDUA.

Motacilla vidua Sundev.; Sharpe, Cat. B. Brit. Mus. x. p. 483 (1885); Reichen. Vög. deutsch. Ost-Afrikas, p. 200, fig. 91 (1894); Shelley, B. Africa, i. p. 11 (1896).

a. ♂ juv. Port Alice, Uganda, Dec. 15, 1894. Iris brown: bill and feet black.

Nos. 1265, 1266. ♂ ad. Nandi, 6500 feet, July 3, 1898.

91. MOTACILLA CAPENSIS.

Motacilla capensis Linn.; Sharpe, Cat. B. Brit. Mus. x. p. 493 (1885); Reichen. Vög. deutsch. Ost-Afrikas, p. 201 (1894: Karagwe); Shelley, B. Africa, i. p. 11 (1896).

No. 1092. ♂ ad. Nandi, 6500 feet, May 9, 1898. Iris brown; bill and feet black.

92. MOTACILLA CAMPESTRIS.

Motacilla campestris Pall.; Sharpe, Cat. B. Brit. Mus. x. p. 510 (1885); Shelley, B. Africa, i. p. 11 (1896).

Budytes campestris Reichen. J. f. O. 1892, p. 52, id. Vög. deutsch. Ost-Afrikas, p. 200 (1894: Bukoba).

Nos. 529, 530. ♂ ♀ ad. Ravine, March 14, 1897. Iris brown; bill black, the base of the lower mandible horn-blue. First specimens seen. They were with *M. flava*, which was very plentiful.

No. 589. ♂ ad. Ravine, March 31, 1897.

93. MOTACILLA FLAVA.

Motacilla flava L.; Sharpe, Cat. B. Brit. Mus. x. p. 516 (1885); Shelley, B. Africa, i. p. 11 (1896).

Budytes flavus Reichen. J. f. O. 1892, p. 52; id. Vög. deutsch. Ost-Afrikas, p. 200 (1894).

Nos. 62, 64. ♂ ♀ imm. Ntebi, Oct. 7, 1895.

No. 524. Imm. Ravine, March 7, 1897. Iris brown; bill and feet dusky black.

Very plentiful from November to end of March.

No. 551. ♂ ad. Ravine, March 21, 1897.

Still very plentiful. None seen March 25th–28th.

94. MOTACILLA FELDEGGI.

Motacilla feldeggi Michahelles; Sharpe, Cat. B. Brit. Mus. x. p. 527 (1885).

Motacilla melanocephala Licht.; Shelley, B. Africa, i. p. 12 (1896).

No. 821. ♂ ad. Berkeley Bay, Jan. 31, 1898. Iris brown; bill brownish black, base of lower mandible horn-white; feet black.

Two or three others seen running about on water-lilies and other aquatic plants in a secluded nook in Berkeley Bay. First individuals of this species seen. In company with *M. melanope.*

95. MOTACILLA MELANOPE.

Motacilla melanope Pall.; Sharpe, Ibis, 1891, p. 588; Shelley, B. Africa, i. p. 11 (1896).

No. 900. ♀ ad. Ravine, 7500 feet, March 5, 1898. Iris brown; bill black, base of lower mandible horn-blue; feet dusky flesh-colour, toes darker.

96. ANTHUS TRIVIALIS.

Anthus trivialis (Linn.); Sharpe, Ibis, 1891, p. 588; Reichen. Vög. deutsch. Ost-Afrikas, p. 199 (1894); Shelley, B. Africa, i. p. 12 (1896).

No. 433. ♂ ad. Ravine, Dec. 8, 1896. Iris brown, bill brown, lower mandible yellowish white; feet brownish flesh-colour. Plentiful.

No. 599. ♂ ad. Ravine, March 26, 1897. Bill brown, lower mandible flesh-colour; feet flesh-colour, with dusky toe-joints.

No. 600. ♂ ad. Ravine, April 2, 1897.

97. ANTHUS PYRRHONOTUS.

Anthus pyrrhonotus (Vieill.); Sharpe, Ibis, 1891, p. 588 (Kikuyu); Reichen. J. f. O. 1892, p. 51; id. Vög. deutsch. Ost-Afrikas, p. 198 (1894); Shelley, B. Africa, i. p. 12 (1896).

a. Ad. Kikuyu.

b. Ad. Kavirondo, Nov. 12, 1894.

c. ♂ ad. (No. 20). Ntebi, May 9, 1895.

d. No. 33. ♂ ad. Ntebi, Sept. 24, 1895.

e. No. 834. ♂ ad. Samia, Feb. 4, 1898.

Iris brown; bill dusky black, base of lower mandible yellow; feet pale brown.

This Pipit has a curious habit of fluttering up into the air, and then flying round in wide circles and constantly darting upward with a rapid quivering of the wings, making a loud "drumming" noise like a toy police-rattle. It came as a surprise to me to meet with this bird so far away from the coast, but it was evidently fairly plentiful, though confined to a very restricted area.

No. 837. ♂ ad. Kakamega, Kavirondo, Feb. 8, 1898. Feet brownish flesh-colour.

No. 954. ♀ ad. Nandi, April 9, 1898.

No. 955. ♂ juv. Nandi, April 9, 1898. Iris crimson-orange; bill brown, lower mandible pinky white; feet dusky white.

98. ANTHUS LATISTRIATUS, sp. n.

A. similis *A. pyrrhonoto* atque *A. sordido,* sed notæi plumis medialiter nigro latè striatis, et hypochondriis latè nigro striolatis distinguendus. Long. tot. 6·5 poll., culm. 0·7, alæ 3·55, caudæ 2·4, tarsi 1·1.

No. 19. ♀. Kavirondo, Nov. 12, 1894. Iris brown; bill dusky brown, with the tips of the lower mandible darker, the base yellow; feet pale brown, the toes dusky brown.

[This Pipit, for which Mr. Jackson proposes the name of *latistriatus,* certainly seems to be different from *A. sordidus, A. pyrrhonotus,* and all the dark-coloured African Pipits, by reason of its black mottled upper surface and the very distinct broad black centres to the flank-feathers. The outer tail-feather is smoky brown, with a whity-brown shaft and an oblique blackish mark on the inner web; there is a light smoky-brown wedge-shaped mark on the penultimate feather, with a whitish spot at the end of it.—R. B. S.]

99. ANTHUS CERVINUS.

Anthus cervinus (Pall.); Sharpe, Cat. B. Brit. Mus. x. p. 585 (1885); Shelley, B. Africa, i. p. 13 (1896).

No. 995. ♂ ad. Nandi, 6500 feet, April 15, 1898. Iris brown; bill dark brownish black, gape and base of lower mandible yellow; feet dark brown. First seen to-day on open downs. Saw two others.

No. 1004. ♂ ad. Nandi, 6500 feet, April 17, 1898.

No. 1010. ♀ ad. Nandi, 6500 feet, April 19, 1898.

June 1st, evidently migrating, as none have been seen lately, although at the time they were plentiful.

100. ANTHUS RUFULUS.

Anthus rufulus Vieill.; Sharpe, Ibis, 1891, p. 589; Shelley, B. Africa, i. p. 12 (1896).

Anthus raalteni Reichen. J. f. O. 1892, p. 51 (Bukoba; Itale).

Anthus cinnamomeus Rüpp.; Reichen. Vög. deutsch. Ost-Afrikas, p. 198 (1894).

a. ♂ ad. Ntebi, June 5, 1895. Feet pale brown.

No. 39. ♂ ad. Ravine, March 18, 1896. Iris brown; bill dark brown, lower mandible yellowish white, tip dusky; feet brownish flesh-colour. Evidently breeding.

No. 47. ♂ ad. Ravine, March 23, 1896.

No. 85. ♂ ad. Ravine, May 17, 1896.

Found nest in a tuft of grass, built entirely of dry grass, with a lining of finer grasses. Eggs three, like those of our Meadow-Pipit, slightly incubated.

Nos. 712, 713, 714, 715, 716, ♂ ad.; 717, 718, ♀ ad. Lake Naivasha, Aug. 4, 1897.

No. 883. ♀ ad. Mau Downs, 8000 feet, Feb. 21, 1898.

No. 1043. ♂ ad. Nandi, 6500 feet, April 28, 1898.

This is the commonest Pipit in the country, and is found almost everywhere on the open grassy downs. It is a tame and confiding bird, allows a near approach, and rarely flies far when disturbed. It often settles on trees and bushes during the heat of the day. It nests on the ground, under the shade of a small bush or tuft of grass or other herbage. It breeds at Nandi in April and May, the nest being placed in a tuft of grass, the materials being grass and moss, lined with very fine grass, hair, &c. Eggs mostly three.

No. 1163. ♂ ad. Nandi, May 28, 1898.

101. MACRONYX CROCEUS.

Macronyx croceus (Vieill.); Sharpe, Ibis, 1891, p. 589 (Machako's); Reichen. J. f. O. 1892, p. 52; id. Vög. deutsch. Ost-Afrikas, p. 199 (1894); Shelley, B. Africa, i. p. 13 (1896).

a. ♂. Kavirondo, Nov. 12, 1894. Bill dusky, base of lower mandible horn-blue; feet pale brown, joints of toes darker dusky brown; iris brown.

b. ♀. Port Alice, Dec. 28, 1894.

c. ♂. Kampala, March 25, 1895.

d. ♀. Ntebi, May 19, 1895.

No. 104. ♂. Ravine, June 20, 1896. Iris brown; bill dusky black, the lower mandible horn-blue with a dusky tip; feet brownish flesh-colour. Plentiful in the open on the eastern slopes of Mau. Almost invariably in pairs all the year round.

No. 107. ♀ ad. Ravine, June 22, 1896.

Nos. 573, 574. ♂ ♀. Ravine, March 29, 1897.

Nos. 854, 855, ♀ ad.; 857, 871, ♂ ♀ ad. Nandi, 6500 feet, Feb. 12–15, 1898.

Nos. 884, 885. ♀ juv. Mau Downs, 8000 feet, Feb. 21, 1898. Iris brown; bill dark brown, the base of the lower mandible pale dull horn-blue; feet dusky flesh-colour, with the joints darker. Appears to be fairly plentiful.

No. 1209. ♀ ad. Nandi, 6500 feet, June 14, 1898.

102. MACRONYX WINTONI.

Macronyx wintoni Sharpe, Ibis, 1891, pp. 444, 589 (Kavirondo); Shelley, B. Africa, i. p. 13 (1896).

No. 729. ♀ ad. Lake Naivasha, Aug. 6, 1897.

[The culmen measures 0·6 inch, and the bill is very small. There is very little pink on the under surface of this female specimen, the throat being buffy white, and the rest of the under surface pale tawny brown, with black streaks on the chest and sides of the body. Only the centre of the breast and edge of the wing are pink.—R. B. S.]

Fam. NECTARINIIDÆ.

103. DREPANORHYNCHUS REICHENOWI.

Drepanorhynchus reichenowi Fischer; Sharpe, Ibis, 1891, p. 590 (Kikuyu); Reichen. Vög. deutsch. Ost-Afrikas, p. 213 (1894).

Nectarinia reichenowi, Shelley, B. Africa, i. p. 2 (1896).

a, b. ♂. Mau, 8000 feet, Oct. 30, 1894.

104. NECTARINIA ÆNEIGULARIS.

Nectarinia æneigularis Sharpe, Ibis, 1891, pp. 444, 590.

a. ♂. Mau, Oct. 30, 1894.

105. NECTARINIA JACKSONI.

Nectarinia tacazze (nec Stanley); Sharpe, Ibis, 1891, p. 590 (Kikuyu).

Nectarinia jacksoni Oscar Neumann, Orn. MB. vii. p. 24 (1899).

a. ♂. Mau, 8000 feet, Oct. 30, 1895. Type of *N. jacksoni.*

Nos. 96, 97. ♂ ♀ ad. Ravine, June 18, 1896. Iris brown; bill and feet black.

No. 194. ♂ juv. Ravine, July 23, 1896.

Nos. 646, 647. ♂ ad. Ravine, July 14, 15, 1897.

No. 651. ♂ juv. Ravine, July 15, 1897.

[Taken as a whole, the birds from Mau and Kikuyu have greener foreheads than Abyssinian examples, and they can be separated; but I notice a slight tendency to a green forehead among some of the Abyssinian specimens. It appears to me likely that the metallic colour changes in time, and that the fresher plumage is greener in tint.—R. B. S.]

106. NECTARINIA KILIMENSIS.

Nectarinia kilimensis Shelley; Sharpe, Ibis, 1891, p. 591 (Machako's; Sotik; Savé; Lake Nahuro); Reichen. J. f. O. 1892, p. 55 (Bukoba; Kahengere; Mengo, Uganda); id. Vög. deutsch. Ost-Afrikas, p. 212 (1894); Shelley, B. Africa, i. p. 2 (1896).

No. 169. ♂ ad. Nandi, 7500 feet, July 10, 1896. Iris brown; bill and feet black.

No. 226. ♂ ad. Elgeyu, Aug. 9, 1896.

No. 471. ♀ ad. Ravine, Feb. 19, 1897.

Nos. 644, 645. ♂ ad. Ravine, July 13, 1897. Plentiful. At present found among a large species of thistle with dark crimson flower.

No. 648. ♂ ad. Ravine, July 14, 1897.

No. 649. ♀ ad. Ravine, July 14, 1897.

No. 860. ♂ juv. Nandi, 6500 feet, Feb. 13, 1898.

No. 1140. ♂ ad. Nandi, 6500 feet, May 23, 1898. Plentiful in Nandi, particularly where the (cork-like bark, red flower, large green leaf) tree is in flower, and also the swamp-loving plants with red tubercle flower.

No. 1162. ♂ ad. Nandi, 6500 feet, May 28, 1898.

107. NECTARINIA PULCHELLA.

Nectarinia pulchella (L.); Sharpe, Ibis, 1891, p. 292 (Njemps); Shelley, B. Africa, i. p. 2 (1896).

Nos. 276, 277. ♂ ad. Elgeyu, 3700 feet, Aug. 16, 1896. Iris brown; bill and feet black. Plentiful.

No. 284. ♀ ad. Elgeyu, 3700 feet, Aug. 17, 1896. Plentiful.

108. CINNYRIS ACIK.

Cinnyris acik (Antin.); Sharpe, Ibis, 1891, p. 592 (Kikuyu; Busoga); Reichen. J. f. O. 1892, p. 55 (Bukoba; Sesse Island); id. Vög. deutsch. Ost-Afrikas, p. 210 (1894).

Chalcomitra acik Shelley, B. Africa, i. p. 4 (1896).

a. ♂. Busoga, Nov. 15, 1894. Bill and feet black; iris brown.

b, *c*. ♂ ♀. Ntebi, April 21, 1895.

d. ♀. Ntebi, Aug. 10, 1895. Iris brown; bill and feet black.

e. ♀. Ntebi, Sept. 8, 1895.

No. 21. ♂ juv. Ntebi, Sept. 20, 1895.

No. 278. ♂. Elgeyu, 3700 feet, Aug. 16, 1896. Plentiful.

109. CINNYRIS KIRKI.

Cinnyris kirki Shelley; Sharpe, Ibis, 1891, p. 592; Reichen. Vög. deutsch. Ost-Afrikas, p. 210 (1894).

Chalcomitra kirki Shelley, B. Africa, i. p. 4 (1896).

No. 636. ♂ ad. Ravine, April 19, 1897. Iris brown; bill and feet black.

No. 763. ♂ ad. Lake Naivasha, Aug. 12, 1897.

Nos. 806, 808. ♂ ♀ ad. Lake Naivasha, Aug. 26, 1897.

No. 1277. ♂ ad. Ravine, Aug. 2, 1898. Rather a scarce bird at the Ravine.

110. Cinnyris erythroceria.

Cinnyris erythroceria (Heugl.); Reichen. J. f. O. 1892, p. 55 (Bukoba); id. Vög. deutsch. Ost-Afrikas, p. 211 (1894: Kagehi); Shelley, B. Africa, i. p. 3 (1896).

a. ♂. Ntebi, March 10, 1895.

No. 34. ♂. Ntebi, Sept. 24, 1895.

111. Cinnyris hawkeri.

Cinnyris mariquensis hawkeri Oscar Neumann, Orn. MB. vii. p. 24 (1899).

No. 282. ♂ ad. Elgeyu, 3700 feet, Aug. 17, 1896.

[The differences between *C. hawkeri* and *C. osiris* are very small, and I very much doubt if they can be kept distinct. The red band on the breast is not quite so tinged with purple or lilac as in *C. hawkeri*, but some Abyssinian examples seem to be scarcely distinguishable from the Somali specimens. *C. suahelicus* has a more sooty-black breast and abdomen. The specimen recorded by me as *C. osiris* from Machako's (Ibis, 1891, p. 593) is referable to *C. suahelicus*.—R. B. S.]

112. Cinnyris microrhyncha.

Cinnyris microrhyncha Shelley; Sharpe, Ibis, 1891, p. 593; Reichen. Vög. deutsch. Ost-Afrikas, p. 211 (1894); Shelley, B. Africa, i. p. 3 (1896).

No. 108. ♂ ad. Mt. Maungu, April 9, 1892.

No. 109. ♂ juv. Maungu Wilderness, April 9, 1892. Bill and feet black; iris brown.

This little Sun-bird was very plentiful in the bush round the base of Mount Maungu.

113. Cinnyris cupreus.

Cinnyris cuprea (Shaw); Sharpe, Ibis, 1891, p. 593 (Kitosh); Reichen. Vög. deutsch. Ost-Afrikas, p. 212 (1894); Shelley, B. Africa, i. p. 2 (1896).

No. 931. ♂ imm. Kavirondo, 4500 feet, March 28, 1898.

114. Cinnyris mediocris.

Cinnyris mediocris Shelley; Sharpe, Ibis, 1891, p. 593; Reichen. Vög. deutsch. Ost-Afrikas, p. 212 (1894); Shelley, B. Africa, i. p. 4 (1896).

a. ♂ ad. Mau, 8000 feet.

No. 40. ♀ ad. Ravine, March 21, 1896. Iris brown; bill and feet black.

No. 111. ♀ ad. Ravine, July 23, 1896.

No. 182. ♂ ad. Mau, 8500 feet, July 12, 1896.

No. 283. ♀ ad. Elgeyu, 3700 feet, Aug. 17, 1896.

No. 654. ♂ ad. Ravine, July 15, 1897.

No. 682. ♀ ad.
No. 683. ♂ ad. } Ravine, July 22, 1897.
No. 684. ♀ ad.

115. Cinnyris chloropygia.

Cinnyris chloropygia (Jard.); Reichen. J. f. O. 1892, p. 55 (Bukoba; Sesse Isl.; Soweh Isl.); id. Vög. deutsch. Ost-Afrikas, p. 212 (1894); Shelley, B. Africa, i. p. 4 (1896).

a. ♂. Ntebi, March 1, 1895.

No. 22. ♂ ad. Ntebi, Sept. 20, 1895.

No. 680. ♀ ad. Ravine, July 22, 1897.

116. Cinnyris reichenowi.

Cinnyris reichenowi Sharpe, Ibis, 1891, pp. 444, 593, pl. xii. fig. 2; Shelley, B. Africa, i. p. 4 (1896).

No. 650. ♂ ad. Ravine, July 14, 1897.

No. 1093. ♂ ad. Nandi, 6500 feet, May 10, 1898. Iris brown; bill and feet black.

No. 1270. ♀ ad. Nandi, 6500 feet, July 8, 1898.

This tiny Sun-bird is plentiful in Nandi. At present they are in pairs. Like all Sun-birds, they are always more in evidence when the various bushes and plants are in flower. The kitchen-gardens, where broad beans and Cape gooseberries are in flower, also the "red-hot poker" and the plants with long tubular flowers, are a great attraction. They are tame, confiding little birds, and will dart and flit about and chase each other in play within a few yards of anyone standing still for a few minutes. Another trait is their pugnacity; two cock birds, when they meet, will invariably fight until one drives the other away.

117. Cinnyris falkensteini.

Cinnyris falkensteini F. & R.; Sharpe, Ibis, 1891, p. 594

(Sotik); Reichen. Vög. deutsch. Ost-Afrikas, p. 212 (1896); Shelley, B. Africa, i. p. 3 (1896).

No. 227. ♂ ad. Elgeyu, 6000 feet, Aug. 10, 1896. Iris brown; bill and feet black.

No. 279. ♂ ad. Elgeyu, 3700 feet, Aug. 15, 1896. Plentiful.

No. 613. ♂ juv. Ravine, April 8, 1897.

No. 815. ♂ ad. Lake Naivasha, Aug. 29, 1897.

No. 868. ♂ ad. Nandi, 6500 feet, Feb. 14, 1898.

118. Cinnyris viridisplendens.

Cinnyris viridisplendens Reichen. J. f. O. 1892, p. 54 (Bukoba); id. Vög. deutsch. Ost-Afrikas, p. 211 (1894).

a. ♂ ad. Ntebi, March 8, 1895.

No. 23. ♀. Ntebi, Sept. 20, 1895.

No. 168. ♂. Nandi, 7500 feet, July 9, 1896. Iris brown; bill and feet black.

No. 1052. ♀ ad. Nandi, 6500 feet, May 2, 1898.

No. 1254. ♂ ad. Nandi, 6500 feet, June 29, 1898.

The least common of the Sun-birds in Nandi, although many plants, such as broad beans, Cape gooseberries, besides several shrubs and plants growing in beds, when in full bloom, are much frequented by other Sun-birds. This bird prefers to hunt about for its insect-food amongst the foliage of tall trees, and particularly amongst the rough bark of the larger boughs, and track spiders, &c. It resembles the Tits in the latter habit.

No. 1261. ♀ ad. Nandi, 6500 feet, July 3, 1898.

[Although all the specimens from Equatorial Africa have green heads, they are approached in this respect by others from the West Coast, and I am not convinced that *C. viridisplendens* is specifically distinct from *C. verticalis*; but a very careful re-examination of the whole series in the British Museum will be necessary to settle the question.—R. B. S.]

119. Cinnyris cyanolæma.

Cinnyris cyanolæmus (Jard.); Shelley, Monogr. Nect. p. 297, pl. 95.

Cyanomitra cyanolæma, Shelley, B. Africa, i. p. 5 (1896).

a. ♀ ad. Buganda, Nov. 26, 1894. Bill black; feet black; iris brown. First one seen.

[This seems to be the first recorded occurrence of this species in Equatorial Africa. The specimen in question is a female, but it agrees with West-African examples in the Museum.—R. B. S.]

120. CINNYRIS RAGAZZII.

Eleocerthia ragazzi Salvad. Ann. Mus. Genov. (2) vi. p. 247 (1888: Shoa).

Cyanomitra ragazzii Shelley, B. Africa, i. p. 5 (1896).

a. ♀ ad. Ntebi, Feb. 25, 1895. Nest and eggs found under eaves of outhouse.

[This agrees with the specimen from Shoa in the British Museum, named by Count Salvadori. The species is very closely allied to *C. obscura*, but it certainly appears to have a little more green tinge on the underparts.—R. B. S.]

121. ANTHOTHREPTES HYPODILA.

Anthothreptes hypodila (Jard.); Reichen. J. f. O. 1892, p. 54 (Bukoba); id. Vög. deutsch. Ost-Afrikas, p. 210 (1894); Shelley, B. Africa, i. p. 6 (1896).

No. 438. ♂ ad. Ravine, Dec. 16, 1896. Iris brown: bill and feet black. Plentiful.

No. 596. ♂ ad. Ravine, March 31, 1897.

No. 627. ♀ ad. Ravine, April 13, 1897.

No. 1005. ♂ ad. Nandi, 6500 feet, April 17, 1898.

122. ANTHOTHREPTES ORIENTALIS.

Anthothreptes longuemarii (nec Less.) Sharpe, Ibis, 1891, p. 594; Reichen. Vög. deutsch. Ost-Afrikas, p. 209 (1894).

Anthothreptes orientalis Hartl.; Shelley, B. Africa, i. p. 6 (1896).

No. 389. ♂ ad. Njemps, Sept. 26, 1896. Iris brown; bill dusky brown, lower mandible paler; feet slaty-black.

Fam. ZOSTEROPIDÆ.

123. ZOSTEROPS JACKSONI.

Zosterops jacksoni Oscar Neumann, Orn. MB. 1899, p. 23.

Z. kikuyuensis Sharpe, Ibis, 1891, p. 594 (pt.: spec. no. 276).

Nos. 119, 120. ♂ ♀ ad. Ravine, June 24, 1896.

No. 123. ♂ ad. Nandi, 6500 feet, June 29, 1896. Iris hazel; bill black; feet horn-blue. Plentiful.

Nos. 484, 485. ♂ ♀ ad. Ravine, Feb. 25, 1897. Iris bright hazel; bill black, base of lower mandible bluish white just at the angle; feet horn-blue.

Very plentiful. At present breeding. Found a nest on the 21st in the drooping branch of a tree with small leaves. It was suspended between a small fork to which it was woven by the upper edges. Built entirely of grey hard moss, and lined with the finest of fibre. It contained two eggs of a palish blue. As I wished to get the pair of birds, I left them and returned later on, only to find the eggs gone. I suspect they were taken by a pair of Bush-Shrikes (*Dryoscopus albofasciatus*), as on going to the spot these birds were making a great noise in a bush close by and repeatedly flew on to the bush close to the nest, and compelled me to throw sticks at them to prevent them, as I hoped, from taking the eggs, which, however, were already gone before my arrival.

This little bird is the most diligent that it is possible to imagine in its search for caterpillars and other insects, and after the breeding-season, when two or more family parties congregate in a flock, the amount of insects they destroy must be very great. Except towards evening, when they have filled themselves to repletion, they are rarely if ever still, but keep darting about among the foliage of both bushes and the tallest trees, twisting and turning their heads in all directions and getting into all sorts of fantastic positions like a Tit, all the time keeping up an incessant chirrup not unlike that of our Goldcrest. As soon as the apparent leader of the flock leaves a tree, perhaps thinking there is little or nothing left worth looking for in the way of food, it darts off to another tree with a chirrup, when it is followed by the rest one after the other, all of which keep up the same soft little chirrup. These birds will be invaluable when fruit-trees are introduced into the country, and orchards are established.

There is no difference between the sexes in coloration, except that the male is somewhat brighter.

No. 602. ♂ ad. Ravine, April 3, 1897.

Nos. 1193, ♀ ad.; 1194, 1241, ♂ . Nandi, 6500 feet, June 24–26, 1898.

[I find that the large series obtained by Mr. Jackson fully bears out Mr. Oscar Neumann's diagnosis of this species. The specimen from Mount Elgon mentioned by me (*l. c.*) proves to belong to *Z. jacksoni*, and not to *Z. kikuyuensis*.—R. B. S.]

Fam. PARIDÆ.

124. PARUS LEUCOMELAS.

Parus leucomelas Rüpp.; Sharpe, Ibis, 1891, p. 595 (Kitosh).

Parus leucopterus Swains.; Reichen. J. f. O. 1892, p. 55; Shelley, B. Africa, i. p. 15 (1896).

a, b. ♂. Ntebi, May 18, 1895. Bill and feet black; iris straw-colour.

c. ♀ juv. Ntebi, August 2, 1895. Bill black, lower mandible yellow; feet dark slaty-grey; iris dark grey.

125. PARUS NIGRICINEREUS. (Plate XIII.)

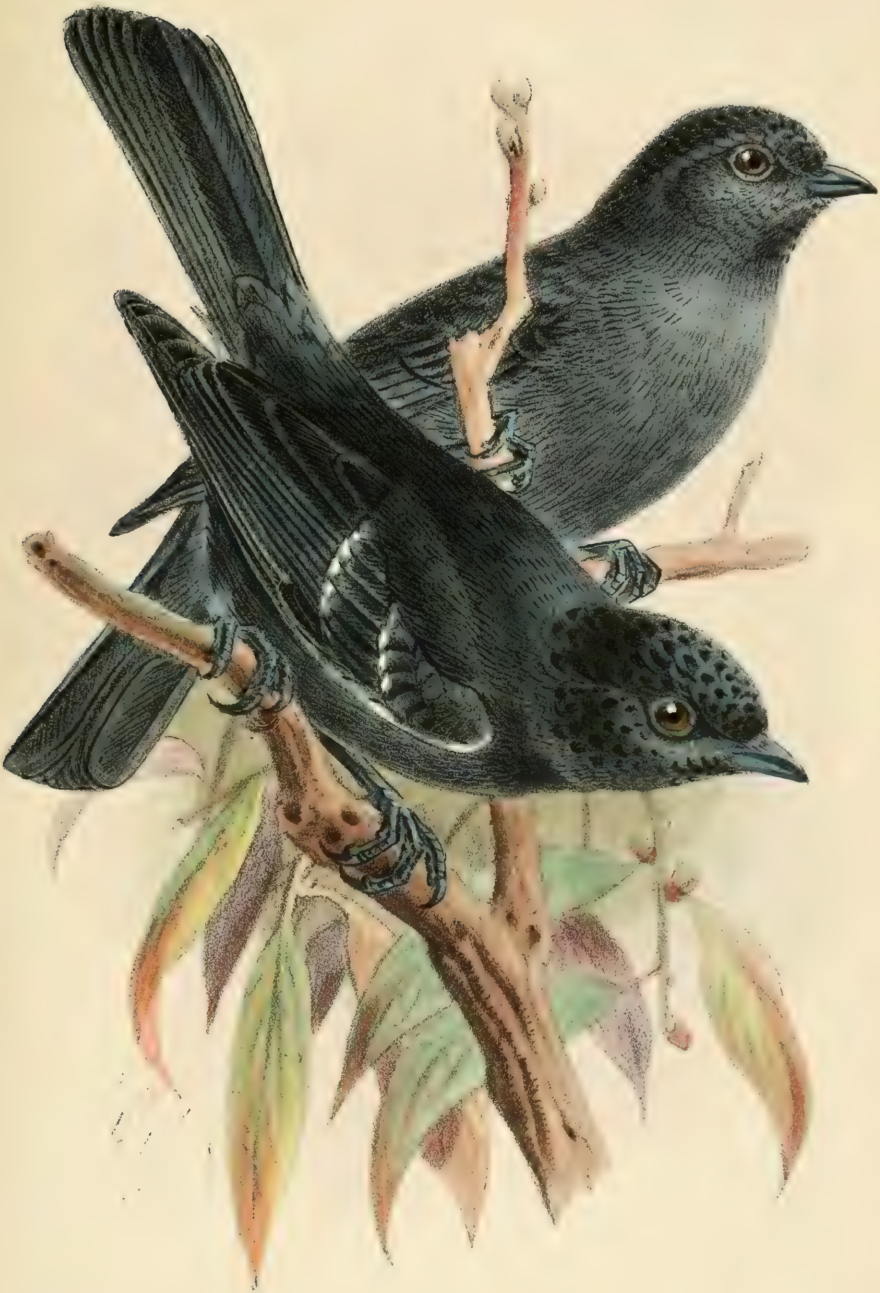
Parus nigricinereus Jackson, Bull. B. O. C. viii. p. xxii (1898).

No. 956. ♂ ad. Nandi forest, 6000 feet, April 10, 1898. Iris crimson-orange; bill black; feet horn-blue.

No. 957. ♀ ad. Nandi, April 10, 1898. Iris crimson-brown.

Nos. 958, 959. ♂ ♀ juv. Nandi, April 10, 1898. Iris brown; bill black, gape pale yellow; feet horn-blue.

[I doubt if this species will be found to be distinct from *Parus funereus* of Verreaux. I had not seen the adult male of *P. nigricinereus* when I gave my opinion to Mr. Jackson that it was distinct from the Gaboon species, and I very much fear that the whitish spots on the wing-coverts are signs of immaturity only.—R. B. S.]



J G Keulemans del et Lth.

Mintern Bros imp.

PARUS NIGRICINEREUS.

AMERICAN MUSEUM
CENTRAL PARK.
NEW YORK.
OF NATURAL HISTORY

126. PARUS ALBIVENTRIS.

Parus albiventris Shelley; Sharpe, Ibis, 1891, p. 595 (Kikumbuliu); Reichen. Vög. deutsch. Ost-Afrikas, p. 214 (1894); Shelley, B. Africa, i. p. 9 (1896).

No. 191. ♂ juv. Ravine, July 22, 1896. Iris brown; bill black; feet horn-blue. Plentiful. Nearly always seen in pairs.

No. 228. ♂ ad. Elgeyu, 6000 feet, Aug. 10, 1896. Fairly plentiful.

No. 494. Juv. Ravine, Feb. 28, 1897. Like our Great Tit in habits. Singly or in pairs. Fairly plentiful.

No. 595. ♀ ad. Ravine, March 31, 1897.

Nos. 652, 653, 668, 671. ♂ ♀ ad. Ravine, July 15–18, 1897.

No. 993. ♂ ad. Nandi, 6500 feet, June 15, 1898.

Nos. 1028, 1029. ♂ ad., ♀ imm. Nandi, June 24, 1898. Plentiful in open wooded country.

No. 1148. ♂ ad. Nandi, May 25, 1898.

No. 1176. ♀ imm. Nandi, May 31, 1898.

No. 1199. ♀ imm. Nandi, June 8, 1898.

No. 1211. ♀ juv. Nandi, June 14, 1898. Very plentiful in the open as well as in belts of forest.

127. PARUS BARAKÆ, sp. n.

Similis *P. thruppi*, sed maculâ nuchali albâ vix conspicuâ, hypochondriis griseis, tibiis albis, et margine interno primariorum albido, nec isabellino, distinguendus. Long. tot. 4·9 poll., culm. 0·4, alæ 2·7, caudæ 1·9, tarsi 0·75.

Nos. 387, 388. ♂. Njemps, Sept. 26, 1896. Iris brown; bill black; feet horn-blue. First specimens seen. There were four or five of them together.

[N.B.—On comparing Mr. Jackson's specimens with the series of *P. thruppi* in the British Museum, it is seen that they are lighter underneath, and not so isabelline as *P. thruppi*, which has the thighs of the same isabelline colour as the abdomen. This isabelline colour also extends along the quill-lining, whereas in *P. barakæ* the inner edge of the primaries and the thighs are white; the sides of the body are also greyer than in *P. thruppi,* and there is less tinge of isabelline colour. The white nape-patch in *P. barakæ* is almost obsolete, whereas in *P. thruppi* it is very distinct and large. It would seem that *P. griseiventris* of Reichenow (Vög. deutsch. Ost-Afrikas, p. 214) must also be allied to the above-mentioned species, but it is described as having a grey streak along the sides of the head from the bill, whereas in *P. thruppi* and *P. barakæ* the lores, sides of face, and ear-coverts are pure white.—R. B. S.]

[To be continued.]

XLIX.—*A few Remarks on Volume XXV. of the ' Catalogue of the Birds in the British Museum.'* By T. Salvadori, C.M.Z.S.

In 1896, on the appearance of vol. xxv. of the 'Catalogue of the Birds in the British Museum,' containing the *Tubinares,* a family in which I was much interested, I made notes concerning some points which seemed to me worth consideration. Although originally for my private use, I think that these notes may be of some service also to other ornithologists, and for this reason I am induced to publish them.

The references to the ' Tableau Encyclopédique et Méthodique ' (Enc. Méth.) on pp. 344, 352, 357, 366, 382, 386, 390, 392, 395, 412, 419, 422, 425, 428, 431, 433, and 437 do not belong to Vieillot (1823), but to Bonnaterre (1790). The same remark applies to the references *Procellaria grisea* (p. 412), *P. variegata* (p. 412), *P. latirostris* (p. 433), and *P. fasciata* (p. 435), all of them attributed to Vieillot, while they belong to Bonnaterre. Luckily, although 33 years older than stated in the 'Catalogue,' those names do not affect the nomenclature followed by Salvin.

The same author used to quote D'Aubenton's ' Planches Enluminées ' after Buffon's ' Histoire Naturelle,' a practice not in accordance with the historical order of the species.

The descriptions of *Œstrelata magentæ, Œ. arminjoniana, Œ. defilippiana,* and *Œ. trinitatis* Gigl. et Salvad. have been published first in the Atti Soc. Ital. Sc. Nat. xi. (1868), pp. 450–458. Salvin's quotation is from 'The Ibis,' 1869, where a translation of the original paper appeared.

Oceanodroma leucorrhoa has been found also in Italy (Gigl. Avif. n. 433; Salvad. El. Uc. Ital. p. 294, 1887). On p. 345 the exact reference to *Procellaria lugubris* Natterer, ought to be Natt. Mus. Vindob., Bp. Atti sesta Riun. Sc. Ital. Milano, 1844, p. 445 (*Oceanum*) (1845). In the same place there are remarks on several *Procellariæ* which have escaped Salvin's notice.

On p. 379 the specific name of *Puffinus yelkouan* is altered, without good reasons, to *yelkouanus*. "Yelkouan" is the Turkish name of the bird, and therefore a substantive, meaning, according to Acerbi, "the bird of the wind." Also the quotation of Acerbi's reference ought to be corrected as follows: Bibl. Ital. t. xlvii. p. 297 (1827).

Puffinus baroli Bonelli, of which the type is in the Turin Museum, is equal to *P. obscurus* and not *P. yelkouan*. I have shown this in the *Uccelli* of the 'Fauna d'Italia,' p. 299.

On p. 428, in the synonymy of the genus *Daption*, the mention of the genus *Calopetes*, Sundev. Av. Meth. nat. Tent. p. 142 (1872), is omitted.

In the synonymy of *Pelecanoides urinatrix*, p. 438, I do not find the reference to *Halodromas tenuirostris* Eyt., the type of which is mentioned in the list of specimens.

Lastly, I cannot find in the volume mentioned *Procellaria munda*, Banks's Icon. t. 24, named by others *Nectris munda* or *Puffinus mundus*. This bird has remained unidentified by Kuhl, Bonaparte, and Coues, by whom, however, it has been mentioned. The inspection of Banks's drawing perhaps might solve the question.

L.—*Bulletin of the British Ornithologists' Club.*

No. LXIV. (July 4th, 1899).

The sixty-third Meeting of the Club was held at the Restaurant Frascati, 32 Oxford Street, on Wednesday, the 21st of June, 1899. *Chairman*: P. L. Sclater, F.R.S. Twenty-four Members and three guests were present.

The announcement of the unexpected death of Mr. John Whitehead, the well-known naturalist and explorer, was received with great regret. A telegram had been received from Hainan stating that he had succumbed to a severe attack of fever on the 2nd of June. Mr. Whitehead had left this country in January with the intention of completing his investigation of the Philippine Fauna and exploring the highlands of Hainan and Formosa. Finding it impossible to do any work in the Philippines in their present disturbed state, he had proceeded to Hainan and had started for the interior of the island on the 13th of March. In his letter, dated the 1st of May, he had reported that he had been very ill and that collecting was almost at a standstill, his entire party having been attacked by fever of a most malignant type. He appeared to have reached the coast, but only to die at Hoihow, and his loss to the scientific world, at the early age of 38, could not be too greatly deplored. A brilliant field-naturalist, his successes in Corsica, North Borneo, and the Philippine Islands were well known through the pages of 'The Ibis,' and it had been hoped that he would long be spared to continue his useful and interesting career.

A vote of sympathy with the family of the deceased was unanimously passed.

Mr. J. L. Bonhote exhibited an example of *Mimus polyglottus,* which he had obtained at Nassau, New Providence.

This individual differed from the majority of specimens in the British Museum in having dark bases to the three outer pairs of tail-feathers.

Mr. Boyd Alexander exhibited male and female examples of a new species of Sun-bird which he had obtained near the Kafui River, South Africa. He proposed to call this species:—

Cinnyris shelleyi, sp. n.

Adult male. Entire head, neck, back, and lesser wing-coverts metallic green, a slight golden gloss on the back of the head, neck, and mantle; wings and tail black. At the base of the metallic-green throat is a narrow steel-blue collar, followed by a broad bright scarlet pectoral band, the feathers of which are partially barred with steel-blue; remainder of the underparts blackish brown. Bill and legs black; iris dark brown. Total length 4·65 inches, culmen 0·85, wing 2·5, tail 1·7, tarsus 0·65.

Adult female. Similar in plumage to that of *C. mariquensis*, but more yellow and less mottled with dusky on the underparts. Total length 4·56 inches, culmen 0·85, wing 2·4, tail 1·7, tarsus 0·65.

Obs. This species is nearly allied to *C. bifasciatus*, which it resembles in size, but differs in having the bastard primary smaller and more pointed: in this character it resembles *C. mariquensis.*

The most marked specific characters of *C. shelleyi* are the sealing-wax red pectoral band, which is similar to that of *C. erythrocerca*, and the blackish-brown breast, which resembles that of *C. bouvieri*; the golden gloss on the metallic upper parts is also far less than in *C mariquensis.* The position of this new species appears to be intermediate between *C. erythrocerca* and *C. mariquensis.* [*Cf. supra*, p. 556.]

Mr. Ogilvie Grant exhibited an example of a new species of Rough-winged Swallow collected by Mr. W. Blayney Percival at Ruo, British Central Africa. Mr. Grant proposed to call it:—

Psalidoprocne percivali, sp. n.

Allied to *P. antinori*, Salvad., from Shoa, but with the general colour of the plumage black glossed with dark green, instead of sooty black with a dull bronze gloss. Total length 5·25 inches, wing 4·1, tail 3·4, tarsus 0·38.

The Hon. Walter Rothschild exhibited the original drawings for the plates in his forthcoming "Monograph of the Genus *Casuarius*" (to be published in the Zoological Society's 'Transactions'), and also the type of *Casuarius loriæ*, Rothsch., and a young bird of the same species. He acknowledged 8 distinct species of *Casuarius*, and, counting all the local races or subspecies, recognized eighteen separable forms, as follows:—

Casuarius casuarius. Ceram.
C. casuarius beccarii. Vokan I., Aru Group.
C. casuarius salvadorii. Arfak, N.W. New Guinea.
C. casuarius sclateri. Southern New Guinea, from Macluer Inlet to Samarai.
C. casuarius australis. Queensland.
C. casuarius violicollis. Probably Trangan I., Aru Group.
C. casuarius intensus. Hab. incert.
C. bicarunculatus. Wammer and Kabroor Is., Aru Group.
C. uniappendiculatus. Arfak and Salwatti.
C. uniappendiculatus occipitalis. Jobi I. and Geelvink Bay, N. New Guinea.
C. uniappendiculatus aurantiacus. Huon Gulf, E. New Guinea.
C. philipi. Hab. incert.
C. papuanus. Arfak and Salwatti.
C. papuanus edwardsi. Geelvink Bay.
C. picticollis. British New Guinea (low country).
C. picticollis hecki. German New Guinea.
C. loriæ. Owen Stanley Range, S.E. New Guinea.
C. bennetti. New Britain.

Mr. ROTHSCHILD further exhibited a pair of the so-called *Palæornis salvadorii* from Thibet. He had lately received two living females of the true *Palæornis derbyana,* said to have come from Hainan. The original examples of *Palæornis salvadorii* came from Moupin and were decidedly smaller than *Palæornis derbyana*; but as the specimens from Thibet were exactly intermediate in size, *P. salvadorii* could not be regarded as a distinct species. Till the true habitat of *Palæornis derbyana,* the largest form, was definitely ascertained, *P. salvadorii* might be given subspecific rank as *Palæornis derbyana salvadorii.*

Mr. ROTHSCHILD also exhibited some skins of *Telespiza cantans* from Laysan Island. They belonged partly to what he had formerly described as a distinct species (Ann. Mag. Nat. Hist. 1892, x. p. 110) under the name of *T. flavissima,* which was also described and figured under this name in the first part of his 'Avifauna of Laysan.' He said that by the fine series of skins he had lately received from Professor Schauinsland, which were much finer specimens and in better plumage than those originally obtained by Henry Palmer, and also from Prof. Schauinsland's careful observations, it was proved beyond doubt that the two forms were not distinct, *T. flavissima* being merely the fully adult male of *T. cantans.* The species would therefore stand as *T. cantans.*

Mr. ROTHSCHILD further exhibited a specimen of an extremely rare Lark, *Mirafra erythropygia* (Strickl.), and a Kestrel, *Cerchneis alopex,* Heugl. The former was known only from Kordofan, and the British Museum possessed no more than one indifferent skin of it. The latter species was previously known from Bogosland, Shoa, and Redjag in Equatorial Africa; the specimens exhibited had, however, been collected by Captain Giffard at Gambaga, north of Ashanti, and their occurrence so far west was in the highest degree interesting.

Mr. ROTHSCHILD also exhibited a pair each of *Pyrocephalus dubius* Gould, and *P. nanus.* The former had been described by Gould from one female collected by Darwin on one of the Galápagos Islands, but it was not known which of them.

In the 'Catalogue of Birds,' *P. dubius* had been united with *P. nanus* in spite of its inferior size and wider and more distinct superciliary stripe. *P. dubius* was, however, a perfectly distinct species and was confined to Chatham Island, while *P. nanus* occurred on most of the remaining islands of the group. Mr. Ridgway had recognized the distinctness of this form in his excellent Monograph of the Ornithology of the Galápagos Islands, and the series obtained by the Harris expedition fully confirmed his opinion.

Mr. ERNST HARTERT exhibited a pair of Flycatchers belonging to an undescribed genus and species. He characterized them as follows :—

DAMMERIA, gen. n. (Muscicapidæ).

Remarkable for its strong, high, and arched beak, with large nostrils plainly to be seen in front of the stiff, short frontal plumes, which are continued on the beak to the nostrils. In the well-developed wing the fifth primary is the longest, the first a little more than half the length of the second. Tail composed of 12 feathers, rather more than two-thirds of the length of the wing ; rectrices about equal in length, slightly pointed at the tips. Metatarsus long, longer than the middle toe with claw, covered in front with a lamina which shows some two or three divisions only near the toes. Sexes dissimilar in coloration.

DAMMERIA HENRICI, sp. n.

Adult male. Above dark slaty blue ; lores and feathers of the forehead darker, nearly black. Above the lores, from the eye to nearly the middle of the forehead, a line of pure white feathers, similar to that found in many species of the genus *Brachypteryx*. Under surface dark slaty blue ; chin darker, almost black ; in the middle of the throat a white, sometimes concealed, patch. Feathers of the chest and breast with narrower or wider longitudinal white spots near the tips ; those of the belly and sides of rump tipped with white ; under tail-coverts nearly black with white patches. Remiges brownish grey towards the bases of the inner webs ; under wing-coverts slate-colour, partly tipped with white. Iris brown, bill black, feet blackish plumbeous. Total length about 130 mm., wing 68–69, tail 50, metatarsus 20, culmen from forehead about 15, bill from end of nostril to tip 7.

Adult female. Above olive with a rusty wash ; a buff superciliary line from the forehead to above the eye. Remiges olive-brown, outer webs edged with rusty brown, pale brown towards the base of the inner webs. Ear-coverts with pale shaft-lines. Under surface rusty buff, brighter on the throat and chest, and washed with olive on the sides and flanks; feathers of the chest with olive patches, producing a somewhat striped appearance. Feet pale flesh-colour. Wing 64–65 mm.

Immature male. Resembles the adult female, but with the upper surface darker and the feathers tipped with ferruginous, the chest more streaked, and the superciliary stripe less developed.

Hab. Island of Dammer in the Banda Sea, where it was discovered by Mr. Kühn.

Mr. Hartert further exhibited a new species of Finch of the genus *Poëphila* and its nearest ally. He described the new form as follows:—

Poëphila nigrotecta, sp. n.

Similar to *P. cincta,* from which it differs in being considerably smaller and in having the upper tail-coverts black like the rump. In *P. cincta* the upper tail-coverts are perfectly white:—not black with white tips as described in Butler's 'Foreign Finches,' where, however, an excellent plate is given.

Total length about 100 mm., wing 59-60 (about 63 in *P. cincta*), tail 41, culmen 9·5.

Hab. Cape York, Queensland, where it was obtained by Mr. Meek.

Mr. Sclater read some extracts from a letter he had received from Major A. Cowie, R.E., at present stationed in the island of St. Lucia, West Indies. Among the birds observed were examples of the American Laughing-Gull (*Larus atricilla*), which had not been previously recorded from the island.

Mr. N. F. Ticehurst exhibited a fine example of the Two-barred Crossbill (*Loxia bifasciata*) which had been obtained in East Sussex on the 23rd of February.

A discussion arose regarding the changes of plumage in the male of the Common Crossbill, in which Messrs. Howard Saunders, Rothschild, Hartert, and Bonhote took part.

Mr. Philip Crowley exhibited two eggs of Paradise-birds which had been obtained on Mount Victoria, British New Guinea. One of these was stated to be undoubtedly an egg of *Paradisea raggiana.*

Mr. Howard Saunders read an extract from a letter received from Mr. Heatley Noble, in which the latter described the breeding of the Scaup Duck (*Fuligula marila*) in Sutherlandshire.

LI.—*Notices of recent Ornithological Publications.*

[Continued from p. 466.]

87. *Andersen on the Birds of the Faeroes.*

[Meddelelser om Færöernes Fugle med særligt Hensyn til Nolsö. 2den Række. Efter skriftlige Oplysninger fra P. F. Petersen, Nolsö. Ved Knud Andersen. Vidensk. Meddel. naturh. Foren. i Kbhvn. 1899, p. 239.]

This is a supplement to a previous paper on the same subject (see Ibis, 1898, p. 614), and contains an account of the birds observed in the Faeroes in 1897 and 1898. Eighty-four species are recorded from Nolsö, and a few from the other islands.

88. *Brewster on a new Clapper-Rail.*

[An undescribed Clapper-Rail from Georgia and East Florida. By William Brewster. Proc. New Engl. Zool. Club, i. p. 49 (1899).]

Mr. Brewster describes *Rallus crepitans waynei,* of the South Atlantic coast, as a new subspecies of the more northern *R. c. typicus.*

89. *Chomiakoff on the Nesting of* Terekia cinerea.

[Ueber das Nisten des Terekwasserläufers (*Totanus terekius* Lath.) im Kassimow'schen Distrikt des Rjäsaner Gouvernements. Von M. Chomiakoff. Bull. Soc. Imp. d. Nat. Moscou, 1898, p. 191.]

The Terek Sandpiper, according to some authorities, is an "Arctic species, breeding in the north of Europe and Asia." The author shows that this is not strictly accurate, as Prof. Bogdanoff and other Russian naturalists have ascertained that it nests in the valleys of the Volga and Ural rivers. He has, moreover, lately found eggs and young in another locality, on the Oka in the Government of Riazan, to the south of Moscow, and his discoveries are now described at full length.

90. *Crossman on the Birds of Hertfordshire.*

[A List of the Birds of Hertfordshire. By Alan F. Crossman, F.L.S. Trans. Hertf. N. H. Soc. x. p. 86 (1899).]

There being hitherto no list of the Birds of Hertfordshire in existence, Mr. Crossman has compiled the present, chiefly from various reports that have appeared from time to time in the Transactions of the Hertfordshire Natural History Society and other publications. Some of the records, Mr. Crossman observes, are open to doubt and require confirmation. The number of species in the list is 216. The only example of the Rock-Thrush (*Monticola saxatilis*) known to have occurred in Great Britain was obtained at Therfield, in Hertfordshire, in May 1843.

91. *Finsch on new Birds from Batu, Sumbawa, and Alor.*

[On three apparently new Species of Birds from the Islands Batu, Sumbawa, and Alor. By Dr. O. Finsch. Notes Leyden Mus. xx. p. 224.]

From specimens in the Leyden Museum Dr. Finsch describes as new the following species :—*Pachycephala vandepolli*, from the Batu Islands ; *Geoffroyus lansbergii*, from Sumbawa ; and *Trichoglossus alorensis*, from Alor.

92. *Finsch on the Thrushes of Java.*

[*Merula javanica* (Horsf.) and *M. fumida* (S. Müll.) two distinct Species. By Dr. O. Finsch. Notes Leyden Mus. xx. p. 227.]

It is shown that *Merula javanica* is different from *M. fumida*, and that there are three species of Thrushes in the highlands of Java, distinguishable by slight, but apparently constant, characters. These are :—*Turdus javanicus*, from Mount Tjerimai, in Western Java ; *T. fumidus*, from Mount Gedé, Western Java ; and *T. whiteheadi*, from Mount Tosari, in Eastern Java.

93. *Hartert on Humming-birds.*

[Further Notes on Humming-birds. By Ernst Hartert. Novitates Zool. vi. p. 72.]

In this paper on Humming-birds Mr. Hartert characterizes *Spathura underwoodi bricena* as a new subspecies from Merida, and *Metallura smaragdinicollis septentrionalis* and *Chalcostigma ruficeps aureofastigatum* as two new subspecies from Northern Peru; he also makes remarks on various species of *Eriocnemis* and *Psalidoprymna.*

94. *Hartert on Birds from Rossel Island.*

[On the Birds collected by Mr. Meek on Rossel Island in the Louisiade Archipelago. By Ernst Hartert. Novitates Zool. vi. p. 76.]

We have now a complete list of the 36 species of birds of which Mr. Meek has obtained examples for the Tring Museum, in Rossel Island. This is the most eastern of the Louisiade group, and Mount Rossel is nearly 3000 feet in height. Mr. Hartert has already described some of the new species in the Bulletin of the B. O. C., but he now adds to the list *Rhipidura louisiadensis, Gerygone rosseliana,* and *Geoffroyus aruensis cyanocarpus.* The most remarkable bird of Rossel Island is the *Pitta* (*P. meeki* Rothsch.), which is allied to *P. mackloti,* but has no black gular spot.

95. *Neumann on the Avifauna of German and British East Africa.*

[Beiträge zur Vogelfauna von Ost- und Central-Africa. Theil ii. Von Oscar Neumann. Journ. f. Orn. 1899, p. 33.]

The second part of Herr Oscar Neumann's account of the birds collected during his East African expedition of 1892–5 relates to the Vultures, Falcons, Owls, Parrots, and Touracous, of which he either obtained specimens or identified the species by observation. Many interesting field-notes, besides corrections of nomenclature and other remarks, are introduced into this paper. Of the Falconidæ, the two least known species seem to be *Astur sparsim-fasciatus*—a near relative of *A. tachiro*—of which a single specimen (the second known) was obtained in Zanzibar, and *Falco fasciinucha*—allied to *F. cuvieri*—from Teita, British East Africa, of which a good coloured figure is given. Among the Owls, *Pisorhina ugandæ* is characterized as a new species allied to *P. capensis.* Herr Neumann met with a small flock of *Psittacus erithacus* in Kwa Kitoto, in Kavironda, on the east shore of the Victoria Lake—the most easterly point of its occurrence yet recorded—and found it abundant among the banana-gardens of Ussoga, north of the Lake. In addition to *Agapornis pullaria,* examples of two other "Love-birds," namely *A. fischeri* and *A. personata,* were obtained. Herr Neumann met with no fewer than 10 species of Musophagidæ; the rarest of these being *Turacus chalcolophue,* lately discriminated by Herr Neumann from *T. livingstonii,* and *T. schalowi,* which was found in the Gurui Mountains and other neighbouring localities in German East Africa.

96. *Neumann on new or little-known African Birds.*

[Neue und wenig bekannte afrikanische Vögel. Von Oscar Neumann. Ornith. Monatsb. vii. 1899, p. 17.]

Herr Neumann characterizes as new :—*Zosterops jacksoni,* from the Mau plateau ; *Z. scotti,* from Ruwenzori; *Cinnyris mariquensis hawkeri,* from Somaliland; *Nectarinia jacksoni,* from Mau and Kikuyu; *Pœocephalus meyeri erythreæ,* from Bogos; *P. meyeri transvaalensis,* from the Transvaal; *Numida somaliensis,* from Somaliland ; and *N. transvaalensis,* from the Transvaal.

97. *Neumann on certain Species of* Nigrita.

[Die schwarzstirnigen *Nigrita*-Arten. Von Oscar Neumann. Ornith. Monatsb., April 1899.]

After a closer examination of the curious Passerine bird obtained in 1895 on Mount Kilimanjaro, and for which the author and Prof. Reichenow proposed the name *Atopornis diabolicus,* Herr Neumann has come to the conclusion that this is simply the young of a species of *Nigrita,* which was subsequently described by Prof. Reichenow as *N. kretzschmari* (Orn. Monatsb. 1898, p. 187). Herr Neumann takes this opportunity of giving a synopsis of the five known species of this aberrant group of thin-billed Ploceidæ.

98. *Oates's Game-Birds of India.*

[A Manual of the Game-Birds of India. Part II. Water-birds. By E. W. Oates. 12mo. Bombay, 1899.]

The second volume of Mr. Oates's handy little Manual of the Game-birds of India (the first part of which we have already noticed, Ibis 1898, p. 306) is now before us, and fully deserves all the commendation we have bestowed on its predecessor. It treats of the 37 Anseres and 7 Limicolæ which occur within the limits of the Indian Empire. Much new matter is introduced into Mr. Oates's account of the Anatidæ, which deserves the careful attention of all ornithologists interested in the group. A Goose from Japan, *Anser mentalis,* is described as new.

99. *Salvadori on Birds from British New Guinea.*

[Viaggio di Lamberto Loria nella Papuasia Orientale.—Intorno ad una Piccola Collezione di Uccelli fatta lungo il Fiume Purari nella Nuova Guinea Orientale-Meridionale. Per Tommaso Salvadori. Ann. Mus. Civ. Stor. Nat. Genova, ser. 2, xix. p. 578.]

Count Salvadori writes on the birds collected by Dr. L. Loria on the Purari River, British New Guinea, in 1894. The 26 specimens are referred to 23 species, of which one, *Ptilotis diops,* is new, and another (*Rhectes*) is doubtfully distinct, but it is nearest to *R. analogus* Meyer.

100. *Salvadori and Festa on Birds from Darien.*

[Viaggio del dott. E. Festa nel Darien e regioni vicine. T. Salvadori ed E. Festa. Uccelli. Boll. Mus. Zool. ed Anat. Comp. R. Univ. Torino, xiv. No. 339.]

The collection of birds made by Dr. Festa at Darien, Chiriqui, and other places in the vicinity consists of 202 specimens, referable to 121 species, of which a list is now given. One of these (*Rhamphocœlus festæ*) has been already described as new. Two others, *Eudocimus albus* and *Chrysotis inornata,* are new to the district.

101. *Saunders's 'Manual of British Birds.'*

[An Illustrated Manual of British Birds. Second Edition, revised and enlarged. Parts VI.–XX. 8vo. London, 1899.]

This work, which was noticed up to Part V. in 'The Ibis' for 1898 (p. 307), was completed in June. In Parts VI.–XX. new articles, with illustrations by Mr. G. E. Lodge, are given of the Siberian Meadow-Bunting, Gyr-Falcon, Caspian Plover, Madeiran Fork-tailed Petrel, Frigate Petrel, Collared Petrel, Black-browed Albatross, and Radde's Bush-Warbler (p. 73*); a new figure and description of the Little Dusky Shearwater are substituted for those of *Puffinus obscurus*; and articles on the Rufous Turtle-Dove, Siberian Pectoral Sandpiper, Yellow-legged Herring-Gull, and Levantine Shearwater are added, although those four species are not figured, because of their close resemblance to species already illustrated. Almost at the last moment the American Spotted Sandpiper was added to the list (p. 605*), and the original figure from 'Yarrell's British Birds' was utilized. Fresh illustrations by Mr. Lodge are substituted for those in the 1st edition of the Short-eared Owl, Tawny Owl, Golden Eagle, Honey-Buzzard, Peregrine Falcon, Osprey, Little Bittern, Mallard, Black-headed Gull, White-billed Northern Diver, Black-throated Diver, and Red-throated Diver.

"Of the 384 species now described, those which have bred within the United Kingdom during the present century may be taken as 199 (if the extinct Great Auk is included); about 74 non-breeding wanderers have occurred fewer than six times, and 66 others are more or less infrequent visitors; while 45 species annually make their appearance, on migration or during the colder months, in some portion of our long, narrow group of islands or upon the surrounding waters."

Three new coloured maps are added, and of these the North Polar chart embodies the latest discoveries by Dr. Nansen and others. The printed additions to our knowledge since the 1st edition was published in 1889, as well as the cordial assistance privately rendered, have led to important alterations (especially as regards geographical distribution) in a very large number of the articles.

102. *Seebohm's 'Monograph of the Thrushes.'*

[A Monograph of the Turdidæ, or Family of Thrushes. By the late Henry Seebohm. Edited and completed (after the Author's death) by R. Bowdler Sharpe, LL.D., F.L.S., &c. Part VI. Imperial 4to. London: Henry Sotheran & Co., 1899.]

The following species are figured in the sixth part of the Monograph of the Thrushes, which advances steadily towards completion :—*Turdus confinis, T. migratorius, T. rufiventer, T. magellanicus, T. falklandicus, T. flavirostris, T. graysoni, T. chiguanco, T. tephronotus, T. olivaceus, T. abyssinicus, T. elgonensis.*

The present part begins with the "Robin" group of North America—*Turdus migratorius* and its allies—and then passes to the South-American *T. rufiventer* and *T. magellanicus*; but we do not quite understand how *T. chiguanco* comes in here, for its true place is surely near *T. fuscater* and *T. gigas.* The monograph then proceeds to the African group which is typified by *T. olivaceus,* and four species are figured.

103. *Stone on Birds in the Collection of the Academy of Natural Sciences, Philadelphia.*

[A Study of the Type Specimens of Birds in the Collection of the Academy of Natural Sciences of Philadelphia, with a brief History of the Collection. By Witmer Stone. Proc. Ac. Nat. Sci. Philad. 1899, p. 5.]

This is a useful and important paper, containing a complete list of the *types* in the famous collection of birds belonging to the Academy of Natural Sciences of Philadelphia, and a good historical account of the way in which the collection was formed. In 1856 it was stated by Sclater, who had devoted several weeks to its examination, that, in his opinion, this collection of birds was superior to that of any other museum then existing. Among the many liberal contributors to this splendid series, which was estimated in 1860 to contain some 26,000 specimens, the chief donor was the late Dr. Thomas B. Wilson, at one time President of the Philadelphia Academy. Dr. Wilson purchased in Europe the large collection of Victor Masséna, Duc de Rivoli, the Bourcier collection of Parrots and Tanagers, the large collection of Australian birds upon which Gould had based his great work, and Capt. Boys's Indian collection, besides a number of other smaller lots and scattered specimens. All these specimens were remounted by Verreaux frères, at that time the largest and best-known firm of natural-history dealers in Europe, and transmitted to the shelves of the Academy's Museum, where they were aranged and studied by Cassin. Unfortunately no care was taken to raise a fund for the support of a curator of this magnificent series, so that, after the death of Dr. Wilson in 1865 and of Cassin in 1869, all work on it ceased until recently, when the author of the present paper took up the subject. It being now universally acknowledged that it is worse than useless to keep valuable specimens mounted and exposed to the light, except such as are required for exhibition to the general public, we are pleased to learn that, when the rearrangement of the Academy's collection was commenced in 1891, it was wisely determined to unmount all the types and valuable specimens, as well as many of the duplicates, and to place them in cabinets, while leaving an ample exhibition series of about 10,000 specimens still unmounted. The total number of specimens in the Academy's collection in 1898 was reckoned at 43,460. Mr. Stone now gives us a complete list of the types in the collection, arranged under the names of the authors who have described them, and appends many critical and useful remarks. A complete catalogue of Gould's Australian Collection, we are told, has been prepared in MS., and may be published later on.

104. *Tegetmeier on the House-Sparrow.*

[The House-Sparrow (The Avian Rat), in relation to Agriculture and Gardening, with Practical Suggestions for lessening its Numbers. By W. B. Tegetmeier, F.Z.S. With an Appendix by Eleanor A. Ormerod, F.E.S. 8vo. Vinton & Co.: London, 1899.]

The views of our friend Mr. Tegetmeier on the desirableness of limiting the numbers of the House-Sparrow (*Passer domesticus*) in this country are well known, and his pamphlet on the subject, written in conjunction with Miss Ormerod, has achieved a circulation of some 36,000 copies. Numerous applications for further details having been received, Mr. Tegetmeier has prepared the present volume of 90 pages on the subject. It contains chapters on the history of the Sparrow; on the opinions of ornithologists and farmers, who are now nearly all agreed as to its detrimental qualities far exceeding any good it may do in destroying noxious insects; and on the various modes of limiting its increase. Although we are strongly in favour of the protection of bird-life in general, an exception appears to be necessary in this instance, at any rate in certain localities, and, along with rats and rabbits, Sparrows must be condemned as *hostes humani generis.* It is well known that the same conclusion has been long ago reached in North America, where the subject of this introduced species has been carefully studied by the U.S. Department of Agriculture.

105. *Wilson and Evans's 'Aves Hawaiienses.'*

[Aves Hawaiienses: the Birds of the Sandwich Islands. By Scott B. Wilson, F.Z.S., assisted by A. H. Evans, M.A., F.Z.S. Part VII., June 1899. 4to. London: R. H. Porter.]

We heartily congratulate the authors of the 'Aves Hawaiienses' on having brought their work to a successful conclusion. This present final part contains an excellent introductory essay on the history of the gradual discovery of this strange avifauna, which, as we now know it, contains 53 Passeres, one Accipiter, two Anseres, one Limicola, and four Ralli (of which two are now extinct) peculiar to the island-group, and it presents a problem in geographical distribution which it is very hard to solve.

The following species are figured in the present part:—*Œstrelata phæopygia, Himantopus knudseni, Viridonia sagittirostris, Himatione maculata, Pennula sandvicensis, P. wilsoni, Sterna hawaiiensis.*

LII.—*Letters, Extracts, Notices, &c.*

We have received the following letters, addressed "to the Editors of 'The Ibis'":—

Sirs,—In your note (Ibis, July 1899, p. 480) on my sketch of the fauna and flora of the Altai Mountains, read before the Linnean Society in December last, you have evidently failed to grasp the geographical features of the country which I visited last year with Mr. Fletcher. You speak of the Western Altai, which I never visited, though it is quite true that Dr. Finsch, in his 'Reise nach West-Sibirien' (Berlin, 1879), did pass through a part of the Western Altai. He does not seem to have spent more than 10–15 days in the Altai Mountains or to have collected birds to any great extent during his rapid journey through the Irtysch and Buchtarma valleys. Neither did he, so far as I can make out, ever cross to the headwaters of the Obb, as you say, or come within 100 miles or more of my route in the mountains. Therefore, when I said that no ornithologist had worked out the birds of the Altai, I think I was correct, and I am sure that any ornithologist who will visit the South-eastern Altai, by which I mean the valleys of the Tchuja, Bashkaus, and Tchulishman rivers—all tributaries of the Obb—he will find a rich harvest of birds, though I venture to think I have not left many new butterflies to be discovered.

It is a fact to be remarked that, judging from the collections of Lepidoptera made by Kindermann in 1851 and 1853, and by Ruckbeil more recently in the Upper Irtysch and Buchtarma valleys, the fauna of that part of the Altai (the South-western) is of a much more European character than in the district where I collected; and, as far as I am at present able to judge, the fauna of the Alatau and Tarbagatai mountains, where Dr. Finsch collected, has more affinity to that of Turkestan than to that of the Eastern Altai and Sayansk mountains, which appear to belong to the same zoological subregion as Eastern Siberia.

Yours &c.,

Colesborne, Aug. 9. H. J. Elwes.

Sirs,—The reference on p. 457 of the July number of 'The Ibis' to Dr. Girtanner's paper on the Bearded Vulture (*Gypaëtus barbatus*) has induced me to record having seen one of these birds near Finhaut, in Canton Valais, Switzerland, on 13th October, 1898.

Snow had fallen in the preceding night, and the mountains were white above 5000 feet. As I climbed through the woods, at about that height, one of these grand birds came towards me, sailing over the tree-tops, and passed directly above my head, quite near me. Round and round it wheeled, in great circles, sometimes disappearing behind the trees, then coming over me again, rising higher and higher, until it passed over the top of Bel-Oiseau mountain. Being unarmed, I had to be content with having "seen" the bird, although within shooting-distance when it first passed me.

Yours &c.,
Percy E. Freke.

7 Limes Road, Folkestone,
August 4th, 1899.

Sirs,—To the notes of Mr. C. W. Andrews on remains of *Pelecanus crispus* from the lake-dwellings of Glastonbury, you have appended a footnote (*anteà*, p. 352) stating that, "according to Mr. A. C. Chapman, the Pelican is still to be found wild in West Jutland." Danish naturalists cannot allow such a statement to pass, and already we have protested ('Ibis,' 1895, p. 294; Vidensk. Medd. Naturhist. Foren. Kjöbenhavn, 1895, p. 60). One or the other species of Pelican (the species alluded to by Mr. Chapman was *P. onocrotalus*) may perhaps be seen in Denmark as the rarest of stragglers; we have no indisputable evidence of it; but that "the Pelican" is *not* "still to be found wild" is beyond all doubt.

Yours &c.,
Herluf Winge.

Universitets Zoologiske Museum,
Kjöbenhavn, August 8th, 1899.

The Bird-Collections of the British Museum.—From the Report on the British Museum for the year ending March

31st, 1899, we extract the following very satisfactory account of the progress of the National Collection of Birds during the past Parliamentary year :—

One of the most valuable of the donations to the Bird department during the year 1898 was that made by Dr. W. T. Blanford, F.R.S. 1314 specimens have been selected from his collection, which contained a series of birds from Quetta obtained by the late Sir Oliver B. St. John, as well as a set of the specimens obtained by Dr. Blanford himself in Sind and Central India. These collections, especially those from the last-named locality, were very valuable as supplementing the great Hume collection already presented to the Trustees by Mr. Allan Hume, C.B.

Mr. R. McD. Hawker, during his recent expedition to Somaliland, took with him a collector on purpose to preserve specimens of Mammalia and Birds for the Museum. His donation of 160 birds was a most interesting addition to the Museum series, and contained the types of 4 new species and examples of 9 species not previously represented in the Museum Collection.

The collection of birds bequeathed by the late Mr. Henry Seebohm in 1896 has now been registered, and the specimens have been placed in the bird-cabinets. This collection consisted of 13,460 specimens, with 139 types and examples of 39 species new to the collection of the British Museum. The donation is one of the most important ever received by the Trustees of the Museum. For several years past Mr. Seebohm had given portions of his collection of birds to the Museum to assist the preparation of the 'Catalogue,' and the whole of his magnificent collection of eggs had also been presented by him to that establishment. The series bequeathed by him, however, contained the results of his expeditions to Siberia and various countries in Europe, the Swinhoe collection of Chinese birds, the Pryer collection of Japanese birds, Doerries' collections from the Amur, besides others from India, Borneo, and various portions of the globe.

A further instalment of the Salvin-Godman collection, amounting to 3408 specimens, has been received and registered, and the registration and incorporation of the Hargitt collection of Woodpeckers have been completed.

The lamented death of Mr. Osbert Salvin, F.R.S., has deprived the Museum of one of its most valued workers, as his unrivalled knowledge of the South American avifauna rendered his aid in the determination of species simply inestimable. Mr. F. D. Godman, F.R.S., the co-author with Mr. Salvin of the great work, the 'Biologia Centrali-Americana,' has, since the death of the latter gentleman, given much of his time to the registration of the collections of birds presented by him to the Museum, and it may be confidently asserted that in the next Annual Report the completion of this huge task will be announced.

It must be noted that as these additional donations of specimens are incorporated in the bird-cabinets, the entire collection is revised and set in order, the specimens arranged in glass-topped boxes and labelled, so that the collection should be made of complete use for the purpose of reference.

During the past year great progress has been made with the rearrangement of the collections of eggs and skeletons. The former work has been entrusted to Mr. Eugene W. Oates, an accomplished oologist, who has had an experience of thirty years' field-work in Burma, and is well known as the editor of the second edition of Mr. Allan Hume's 'Nests and Eggs of Indian Birds.' Mr. Oates is now engaged in re-arranging and cataloguing the collection of birds' eggs in the Museum, and during the year 1898 no fewer than 15,000 specimens have been dealt with. Similar satisfactory progress has been made with the rearrangement and determination of the collection of birds' skeletons, for during the past year all those of the Penguins, Petrels, Pelicans, and Cormorants, as well as the Ducks, have been examined and carefully identified by Mr. W. P. Pycraft and arranged in boxes. A number of doubtfully identified or imperfect skeletons have been eliminated from the collection, while many beautifully prepared specimens have been added to the series.

The rearrangement of the specimens in the Public Gallery has made great progress, and nearly one-half of this section is now completed. The most competent taxidermists have been employed, and every effort has been made to render the specimens exhibited in the Public Gallery as true to nature as can be achieved by the art of the bird-stuffer. The mounting of the specimens has been mainly executed by Mr. J. Cullingford, of Durham, and Mr. E. Pickhardt, of London.

Simultaneously with the reorganization of the exhibition series in the Bird Gallery, the badly mounted and unsuitable specimens have been removed, and have either been transferred to the duplicates, or, when of historical value, carefully unmounted and incorporated in the study series.

The groups illustrating the nesting-habits of British birds are now so nearly complete that additions to this series can be expected to take place only at rare intervals. During 1898 the nests of the Grey Lag Goose and the Common Partridge have been added; as well as a beautiful pair of Glaucous Gulls with their nestlings, procured on Waigats Island by Mr. Henry J. Pearson, and presented by him to the Museum.

The actual number of specimens registered during the past year has been 30,144. All these have been incorporated, and the recent acquisitions have been neatly labelled. Much assistance in the latter work has been voluntarily given by Miss Dorothy Bate and Mr. Robert Reid.

The following account of the additions to the National Collection of birds is extracted from the same report:—

The total number of additions to this group is 23,710, of which the following deserve especial mention:—

The Seebohm bequest of 13,460 specimens. Another instalment of the Salvin-Godman collection, containing 3408 specimens, additional to those mentioned in previous reports. The Blanford collection, consisting of 1344 specimens from various parts of the Indian Empire; presented by Dr. W. T. Blanford, F.R.S.

33 birds from Franz-Josef Land, obtained during the

Jackson-Harmsworth Expedition, and presented by F. G. Jackson, Esq. 678 eggs of Chilian birds, bequeathed by the late H. Berkeley James, Esq. 76 specimens from the Philippine Islands, collected by [the late] Mr. John Whitehead; purchased. 42 birds from Somaliland, including the type of *Caprimulgus torridus*, a new species of Nightjar; presented by J. Benett-Stanford, Esq. 97 birds from N.W. Fohkien, including the types of seven new species; presented by C. B. Rickett and J. D. La Touche, Esqs. A nest of *Quiscalus crassirostris* from Jamaica; presented by Lady Blake. A pair of Glaucous Gulls (*Larus glaucus*) with nestlings, as well as several nestlings of the Little Stint and other Arctic birds; presented by H. J. Pearson, Esq. 19 birds from Somaliland; presented by C. V. A. Peel, Esq. A specimen of the rare Bornean Cuckoo Falcon (*Baza borneensis*) from Sarawak; presented by Charles Hose, Esq. 25 birds from St. Aignan Island, Louisiade Archipelago, including three species new to the collection; collected by Mr. A. S. Meek; purchased. 164 birds from Flores, including 8 species new to the collection, 86 birds from Waingapo, and 90 birds from Borneo, containing many rare and unrepresented species; obtained by the late Mr. A. H. Everett; purchased. 232 birds from Bering Sea; presented by G. E. H. Barrett-Hamilton, Esq. A series of the Central European Nutcracker (*Nucifraga relicta*) from Austria; received in exchange from Victor Ritter von Tschusi zu Schmidhoffen. 200 specimens from Somaliland, including 7 types of new species and 8 other species new to the collection; obtained by E. Lort Phillips, Esq.; purchased. 18 birds from the Chin Hills, Burma, including the type of a new Pheasant (*Gennæus wickhami*). 44 birds, 15 nests and eggs, 13 skeletons from Christmas Island; collected by Mr. C. W. Andrews; presented by Sir John Murray, K.C.B. 443 specimens of birds from Canada; received in exchange from J. H. Fleming, Esq., of Toronto.

The types of two new Pigeons (*Petrophassa rufipennis* and *Ptilopus alligator*) from Alligator River, N.W. Australia; received in exchange from Professor R. Collett. 40 specimens of Larks and other birds from Morocco and Tunis, including 3 very rare species, new to the collection; presented by J. I. S. Whitaker, Esq. 8 birds from Pará, including the rare *Psophia obscura*, new to the collection; presented by Dr. E. A. Goeldi. 74 birds from the Khin-gan Mountains, Mongolia; presented by Dr. Donaldson Smith and J. E. and G. L. Farnum, Esqs. 53 birds from Mozambique; presented by H. S. H. Cavendish, Esq. 24 birds from the Owen Stanley Mountains, S. E. New Guinea; purchased. 118 birds from British Guiana; presented by Dr. J. J. Quelch and F. V. McConnell, Esq. 72 birds from North Borneo; collected by J. B. Bell, Esq.; purchased. The nest and eggs of Prince Albert's Rifle-bird (*Craspedophora alberti*) from Queensland; received in exchange from D. Le Souëf, Esq. 61 birds from Southern Somaliland and the Lake Rudolf district; presented by Lord Delamere. 28 specimens from New Guinea, &c., including 5 species new to the collection; received in exchange from the Hon. Walter Rothschild, M.P. 93 birds from the Louisiade Archipelago, collected by Mr. A. S. Meek; purchased. 21 specimens of birds from Lahej, Southern Arabia, and 163 specimens from Somaliland, including types of 3 new species; presented by R. McD. Hawker, Esq. 238 birds from Nyasaland; presented by Alfred Sharpe, Esq., C.B. 66 birds from the Salisbury district in Mashonaland, including the type of *Stactolæma sowerbyi*, a new species of Barbet; collected by Mr. J. S. Sowerby; purchased. 95 birds from Machako's, British East Africa; presented by Dr. S. L. Hinde. 18 birds from Central Australia; procured during the Horn Expedition, and presented by W. A. Horn, Esq. 77 specimens from Muscat, Arabia; presented by Surgeon-Lieut.-Colonel Jayakar. 21 birds from Mt. Albert Edward, S.E. New Guinea; purchased. 64 eggs of Gulls and Ducks from the Smölen Islands, N. Norway; presented by Dr. R. Bowdler Sharpe.

Acquisition of Mr. H. E. Dresser's Collection of Birds by the Manchester Museum.—We take the following from the

Report of the Director of Owens College:—"The number of donations shows no signs of falling off. By far the most important during the past twelve months has been the collection of birds formed by Mr. H. E. Dresser, which has been purchased and presented to the Museum by a gentleman who desires to remain anonymous. This collection formed the basis of Mr. Dresser's great work on 'The Birds of Europe,' and his monographs of the Rollers and of the Bee-eaters, and is one of the most important in the country. Neither trouble nor expense has been spared to make it as complete as possible, and more particularly to make it a working collection. Numerous specialists, who have had the privilege of making use of it in their studies, have united in expressing their opinion of its value in this particular direction. As regards the extent of the collection, there are of Bee-eaters about 30 species and 155 specimens, and of Rollers 26 species with 112 specimens, while the Western Palæarctic collection contains 721 and the Eastern 260, making a total of 1037 species, or more, according to the British Museum catalogue. When it is remembered that in almost every instance these forms are represented not merely by a single skin but by several, showing the differences of plumage due to sex, age, and local variation, it will be readily believed that it amounts in total to some 10,000 specimens. There are several types and numerous rarities, among which may be mentioned two specimens of the Rosy Gull, whose nesting-place was discovered by Nansen in Franz Josef Land, and two Labrador Falcons. The skins have all been carefully selected, and the collection has been accurately labelled, all particulars as to habitat and other details being recorded. Many specimens have been compared with rare types and noted as agreeing with them; others are the first or the only recorded specimens that have occurred within the Western Palæarctic area. Enough has now been said to show that the acquisition of this valuable collection is indeed a piece of singular good fortune for the Manchester Museum, and therefore for all students of ornithology in this neighbourhood."

Of the chief Palæarctic families the particulars, furnished by Mr. Dresser, are as follows :—

	Species.		Species.
Turdinæ	45	Nocturnal Raptores	23
Saxicolinæ	44	Diurnal Raptores	58
Sylviinæ	96	Anatidæ	51
Paridæ & Sittidæ	51	Gallinæ	41
Motacillidæ, Laniidæ, & Muscicapidæ	80	Charadriidæ	80
Fringillidæ	116	Laridæ & Stercorariidæ	42
Alaudidæ	34	Tubinares, Alcæ, & Pygopodes	32
Picidæ	26		

Owens College is indeed to be congratulated upon possessing so valuable a collection.

LIII.—*Obituary.*

John Cordeaux, F. B. Simson, and E. M. H. Riddell.

John Cordeaux, who died at his house at Great Cotes, Lincolnshire, on August 1st, in his sixty-ninth year, was the son of the Rev. John Cordeaux, M.A., and was born at Foston Rectory, Leicestershire, on February 27th, 1831. In youth some of his vacations were passed in the neighbourhood of Louth, and this perhaps fostered a taste for the marshlands and coast of Lincolnshire, and led to his taking up his abode at Great Cotes when quite a young man. A frequent contributor to the 'Zoologist,' 'Naturalist,' 'Field,' &c., the year 1873 saw the publication of 'The Birds of the Humber District,' an admirable little book, full of the results of personal observations. A supplement, up to date, was published shortly before his death. In the autumn of 1874 he made his first visit to Heligoland, and was the earliest British ornithologist to make known, from personal experience, the extensive collection formed by the late Heinrich Gätke. A description of this visit appeared in 'The Ibis' for 1875 (pp. 172–188), and his acquaintance with Gätke stimulated his previous interest in the migration of birds to such an extent that in 1879 he joined Mr. Harvie-Brown in a scheme for obtaining reports on the subject from the keepers of lighthouses and lightships on the coasts of Great Britain and Ireland. At the Meeting of the British Association at Swansea in 1880 he was appointed Secretary of a Committee (with a small grant) to carry out this plan, and for nine years he gave gratuitously an enormous amount of labour—not unattended by expense—to this undertaking. Its remarkable success has been shown in the 'Digest of the Observations' made by Mr. W. Eagle Clarke, presented to the British Association at Liverpool in 1896, and its influence upon the study of migration can hardly be overrated.

In addition to ornithology, Cordeaux possessed a considerable knowledge of other branches of zoology as well as of botany, while a strong appreciation of the poetry of nature lent a grace to his writings. He was a good sportsman and a fine specimen of the country gentleman, as well as a most genial companion; and by his death, not only science, but also those who were privileged to know him as a friend, have sustained a very serious loss.

Mr. Frank B. Simson, who died on the 28th of last May, was elected a Member of the B. O. U. in 1881. He was one of the old school of sportsmen-naturalists, a friend of Jerdon and of Blyth, and he shared their labours; but he wrote little in his own name. It might have been expected that he would have contributed to 'Stray Feathers,' but his name does not appear in any index, and the only paper we can find in 'The Ibis' is on the Pink-headed Duck (*Anas caryophyllacea*) in 1884, pp. 271–275. In 1886 he produced a work entitled 'Notes on Sport in Eastern Bengal.'

We have also heard, with regret, of the death of Mr. Edward Mitford H. Riddell, of 9 Minster Yard, Lincoln. He was elected a Member of the B. O. U. in 1898.

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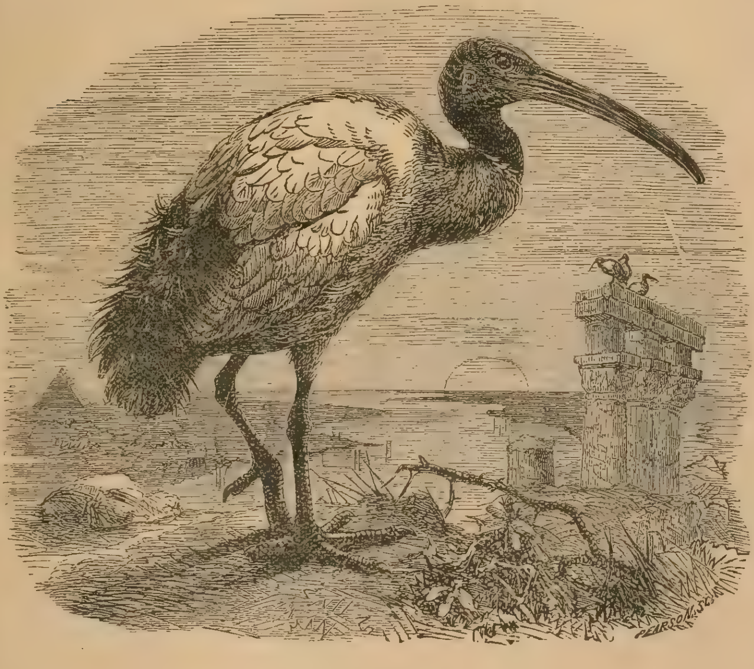

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2. 'Aquila.' (Jahrgang v. Nr. 4, 1898.)

3. BOLAU. Die Typen der Vogelsammlung des Naturhistorischen Museums zu Hamburg. (Mitth. Naturh. Mus. Hamburg, xv.)

4. Bulletin of the Liverpool Museum. (Vol. i. Nos. 3 and 4, 1898.)

5. CAMPBELL. Nests, Eggs, and Play-grounds of the Australian Ptilonorhynchinæ, or Bower-Birds. (Proc. R. Physical Soc. Edinb. xiv. p. 13.)

6. FINSCH. On the Specific Distinction of the Ground-Cuckoos of Borneo and Sumatra. (Notes Leyden Mus. xx. p. 97.)

7. FINSCH. On seven new Species of Birds in the Leyden Museum from the Islands of Wetter, Kisser, Letti, and New-Guinea. (Notes Leyden Mus. xx. p. 129.)

8. FINSCH. Über *Scops magicus* (S. Müll.) und die verwandten Arten. (Notes Leyden Mus. xx. p. 163.)

9. LEE. Among British Birds. Part xii. (4to. Edinburgh, 1898.)

10. MACPHERSON. William Turner, the Father of British Zoology. ('The Zoologist,' 1898, p. 337.)

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